

# Entiat Sustainable Recreation Strategy



*Looking north on the Entiat River Trail. (Credit: Galambos, 2019)*

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## Acronyms

ADA - Americans with Disabilities Act  
CG - Campground  
ERD - Entiat Ranger District  
OHV - Off-highway Vehicle  
USFS - United States Forest Service  
WATV - Wheeled All-terrain Vehicle  
WWU - Western Washington University

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# 1. Introduction

## 1.1 The Entiat Ranger District

The Entiat Ranger District (ERD) is part of the Okanogan-Wenatchee National Forest in Central Washington (Figure 1.1). The ERD encompasses a total of 272,101 acres, which includes 25,557 acres of the Glacier Peak Wilderness, and hosts hiking trails, campgrounds, backcountry access, and some of the most technical and vast motorized trails available in the state (USFS, n.d.-a).

Frequent wildfires shape the conditions in the Entiat Valley. The U.S. Forest Service (USFS) describes the Entiat Ranger District as having a wildfire-dependent ecology, meaning the environment is adapted to a regular wildfire regime (USFS, n.d.-a).

Wildfires in the last decade have severely damaged recreational facilities. In addition, the Wolverine (2015) and Cougar Creek (2018) wildfires caused prolonged closure of the recreational opportunities in the ERD. In 2015, much of the upper ERD was closed to public recreation access because of hazardous conditions (e.g., potential for landslides and falling trees) that resulted from the Wolverine Fire. The upper valley reopened in the spring of 2017, only to be followed by the severe wildfire season of 2018.

Managing recreation in a fire-dependent region necessitates prioritizing recreation opportunities to inform pre-fire planning, protection efforts during wildfire, and post-fire recovery. The Entiat Sustainable Recreation Strategy looks toward the future with the goal of redefining what recreation means in the ERD based on a framework of sustainable recreation informed by public input and national forest sustainable recreation strategies. The purpose of this strategy is to provide recommendations for sustainable and resilient recreation management in the ERD.

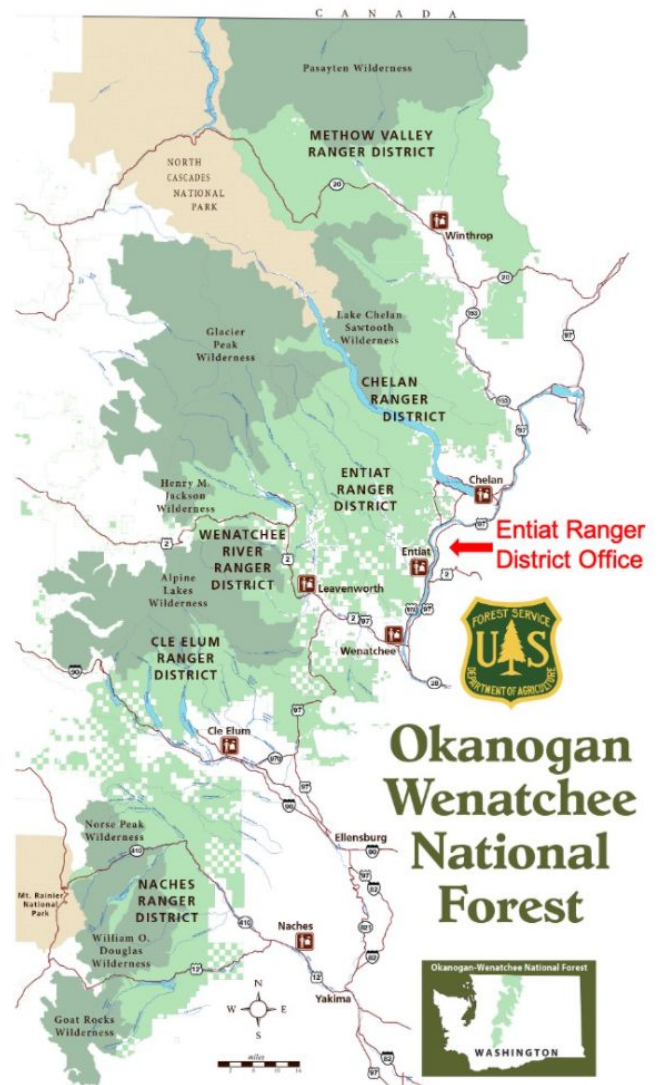


Figure 1.1 Location Map for Entiat Ranger District.  
(Credit: USDA Forest Service)

While the complexities of the Entiat Ranger District are localized, they are far from unique. Public recreation resources across the U.S. are faced with challenges from increasing demand, diminishing financial resources, and a changing climate (USFS, 2010). Planning strategies that will continue to provide recreation opportunities to communities must recognize the importance of sustainability and be resilient to changing ecological and social conditions.

## 1.2 Regional Context

Bordered by the Chelan and Wenatchee River Ranger Districts, the ERD is situated between two recreation hubs in Central Washington. During warmer months, the Wenatchee River Ranger District hosts vast rock-climbing opportunities and access to the beloved Enchantments Permit Area in the Alpine Lakes Wilderness. In the winter, the quaint village of Leavenworth continues to attract west-side visitors to the Wenatchee River District. Winter recreation includes non-motorized winter activities like cross country skiing and snowshoeing, as well as access to groomed snowmobile routes. The Chelan Ranger District provides endless water activities along the shores of the 50-mile-long Lake Chelan during the summer. Beyond the water, the southern region of the district is popular among mountain bikers. Toward the north, backcountry camps attract backpackers looking to access the Glacier Peak Wilderness. In the winter, Echo Ridge nordic park attracts non-motorized winter recreationists with more than 25 miles of groomed ski/snowshoe trails just outside of Chelan.

As a neighbor to these ranger districts, the Entiat is part of a region that offers varied recreation opportunities. As a result, Entiat's recreation opportunities do not need to fill all user's needs, in all locations, at all times. Rather, the goal of the ERD's sustainable recreation strategy is to prioritize recreation opportunities across the ERD that meet user needs/interests and environmental conditions, while recognizing that ERD recreation opportunities complement those within the surrounding region. The Forest Service Recreation Opportunity Spectrum recommends dividing recreation landscapes into zones or regions based on development level to provide a variety of user experiences (1986). Beyond development, managers should consider the environmental characteristics such as vegetation, hydrology, elevation, and use patterns. By incorporating a zone or region-based management approach, this strategy aims to provide a spectrum of opportunities within different zones, recognizing the ERD's limited capacity to provide all opportunities, everywhere.

For this strategy the ERD was organized into four geographic zones (Figure 1.2):

- Geographic Zone 1: Lower Valley
  - Human-developed land mixed with temperate-boreal grassland/shrub, semi-desert grassland/shrub, and temperate-boreal forest/woodland.
- Geographic Zone 2: Middle Valley
  - Some human development mixed with semi-desert scrub and grassland, temperate and boreal forest/woodland.
- Geographic Zone 3: Upper Valley, Non-Wilderness

- Dense temperate-boreal forests/woodland with evidence of burn.
- Geographic Zone 4: Glacier Peak Wilderness
  - Rugged, temperate-boreal forests/woodland with glacier-covered peaks, alpine lakes, and evidence of burn.

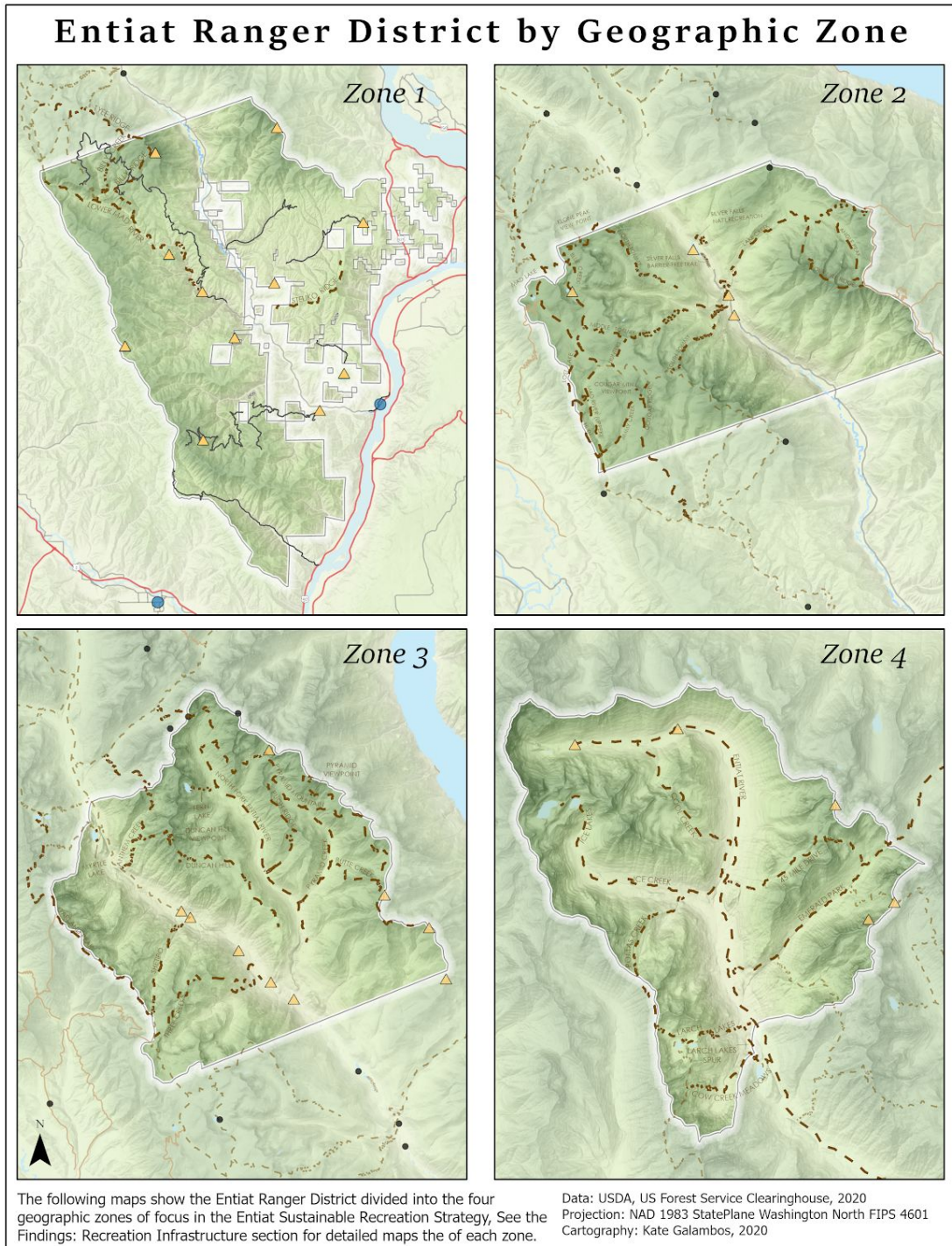


Figure 1.2. Entiat Ranger District Geographic Zones



Just as the District's geography is diverse, so are the characteristics of the population. It was important to consider these diverse characteristics in developing the sustainable recreation priorities identified in this strategy. From 2000 to 2018, the population in Chelan County increased by 16% from 66,648 to 77,036 (Headwaters Economics, 2020, p. 6). Chelan County's population is composed primarily of people who identify as white (68.8%), however, those who identify as Hispanic/Latino compose nearly a third of the population (27.2%) (Headwater Economics, 2019a). Between 2000 and 2018, the percent change in Hispanic population was 82%; from 12,831 in 2000 to 23,344 in 2018 (OFM, 2020a). The aging population in the area is also growing. In 2000, there were 9,242 people 65 or older. In 2018, that number had grown to approximately 15,267, resulting in a 65% change in nearly two decades (OFM, 2020b, p. 44). Local residents are primarily employed in commodity sectors (12%) — timber, agriculture, and mining — retail services (11%), and education, health care and social assistance (22%) (Headwaters Economics, 2019a). These local demographic and labor statistics offer insights into recreation values in the ERD region. Furthermore, the reach of planning for the ERD extends beyond the local scope to include visitors from throughout Washington. More than 16% of homes in Chelan County are considered “second homes,” which are homes occupied seasonally by non-residents of the county, suggesting that people not living near the ERD still have significant interest in its future (Headwater Economics, 2019b).

### 1.3 Shared Stewardship

The Forest Service's principles of Shared Stewardship prioritize collaboration with local partners to find solutions to large scale issues facing the forests such as wildfire, habitat encroachment, and consequences of climate change (USFS, n.d.-c). The approach is also applicable to recreation. The Forest Service can not meet the expectations and needs of trail users and stakeholders on its own; it requires a collective community of stewards (USFS, 2017). For the ERD, these partners include recreation groups such as Access Entiat, Northwest Motorcycle Association, TREAD Wenatchee, and Washington Trail Association. And beyond the neighboring Chelan and Wenatchee Ranger Districts, regional agencies like the Entiat National Fish Hatchery, and the Yakama Nation are key partners. These organizations have similar goals to the ERD and can provide resources to meet joint priorities. Recreation groups provide essential volunteers for maintenance projects and aid in community outreach and neighboring Districts, tribes, and land managers work to protect local natural resources.

### 1.4 Current State of Recreation Facilities

The most popular activities in the Entiat are off-highway vehicle (OHV) riding, backcountry camping and hiking, general nature viewing, and horseback riding and stock use. The Entiat has become known for motorized



Figure 1.3. A rider enjoys a motorized trail on the Okanogan-Wenatchee National Forest. (Credit: USDA Forest Service photo)

recreation opportunities in recent decades. The nearly 140 miles of motorized trails draw dirt bikers, and other OHV-riders, from across the state (Figure 1.3). Along with trails, motorized recreationists use ERD roads to access high elevation scenery unique to the region.

In addition to its motorized notoriety, the Entiat is popular among mountaineers looking to reach peaks like Mount Maude, Saska Peak, Emerald Peak, and more (Figure 1.4). For mountaineers across the state, the Entiat provides solitude as an unknown gem in the Central Cascades.



Figure 1.4. Cow Creek Meadow in the Entiat Ranger District. (Credit: Galambos)

Both motorized and non-motorized recreationists find advanced opportunities away from Western Washington crowds. However, like many ranger districts in the West, much of the infrastructure of the Entiat was built decades ago.



Figure 1.5. Historic Map of the Lake Chelan Recreation Area (Credit: USFS Region 6, 1936)

Historic context is key when evaluating the current status of recreation in the ERD. Campgrounds, roads, and trails in the ERD were built during times of larger budgets, more staff, and fewer visitors (Figure 1.5). Tables 1.1 and 1.2 outline campground facilities and miles of trails by type currently found in the valley. While the legacy of resources has provided generations of access to the Entiat region, it has also led to potentially unrealistic expectations for the future. Forest Service budgets do not support the level of management seen in the 20th Century. The Recreation, Heritage, and Wilderness account, which covers the recreation spending for the Forest Service, has decreased by 23% since 2001. The amount of funding available in any given year is far less than that needed to maintain the 260 miles of trails and 8 campgrounds in the ERD to national quality standards. As of the 2020 budget, \$258 million were appropriated to the Recreation, Heritage and Wilderness account, \$42 million less than

necessary just to cover the trail deferred maintenance costs.

As a result, the purpose of this strategy is not simply to uphold a status-quo developed lifetimes ago. Instead, priorities for this strategy are developed with the current staff and budget capacity, future growth in visitation, and rapidly changing environmental conditions in mind.

*Table 1.1. Current campground facilities in the ERD*

<b>Name</b>	<b>Number of Sites</b>	<b>Zone</b>	<b>Operational</b>
Cottonwood	26, fewer usable	Upper Valley, 3	Yes
Fox Creek	16	Middle Valley, 2	Yes
Lake Creek	19, fewer usable	Middle Valley, 2	Yes
North Fork	N/A	Upper Valley, 3	No
Pine Flats	7, fewer usable	Lower Valley, 1	Yes
Silver Falls	32, fewer usable	Middle Valley, 2	Yes
Spruce Grove	2	Upper Valley, 3	No
Three Creek	4	Upper Valley, 3	No

*Table 1.2. Trails in the Entiat Ranger District by designated use*

<b>Type</b>	<b>Total (miles)</b>	<b>Geographic Zone 1</b>	<b>Geographic Zone 2</b>	<b>Geographic Zone 3</b>	<b>Geographic Zone 4</b>
Multiple-Use/Motorized	198.5	44.3	98.5	55.7	0
Non-motorized	74.2	0	0	24.9	49.3
Hiker Only	9.2	0	2.7	1.5	5

## 1.5 Defining Sustainable & Resilient Recreation

The Forest Service defines sustainability as “the capability to meet the needs of the present generation without compromising the future” (USFS, 2012). To meet these needs, sustainable planning generally focuses on environmental, social, and economic principles. Sustainable planning relies on establishing a carrying capacity of a specified resource, which then is used as a guide for decision-making. Decisions are made with the goal of controlling use or impact to the natural resource at or below carrying capacity levels (Manning et. al, 2011). In the past, USFS planning documents such as “Region 6 Sustainable Recreation Strategy Summary” and the “National Framework for Sustainable Recreation” have depended on sustainability alone as the guiding framework.

The “National Framework for Sustainable Recreation” relies on the three spheres of sustainability — environmental, social, and economic (primarily referred to in this strategy as financial) — to guide decision making. In addition to these, this strategy recommends utilizing resiliency planning as a fourth component of sustainability. As outlined in the “Current State of Recreation” section, much of the infrastructure in the ERD was built close to a century ago in an entirely different environmental, social, and financial context. Resiliency planning incorporates known disturbances — environmental or social — and offers solutions that preserve infrastructure in the long-term (Ahern, 2012). In the case of the ERD, wildfire and significant decreases in recreation funding represent major disturbances. As these disturbances impact managers’ ability to sustain recreation opportunities, managers must invest and divest in resources strategically to be able to recover over the long-term.

The four components of a sustainable recreation strategy consider environmental sustainability, social sustainability, financial sustainability, and resilience capacity, and are described in more detail in Figure 1.6. For recreation opportunities to be available to current and future users, all four should be considered. Otherwise, if one of these elements is missing or not adequately addressed, it should be a priority to correct. If conditions are such that the issue cannot be rectified in a reasonable manner, decision-makers should take steps that protect visitor safety and ecological integrity within existing fiscal and staffing capacity.

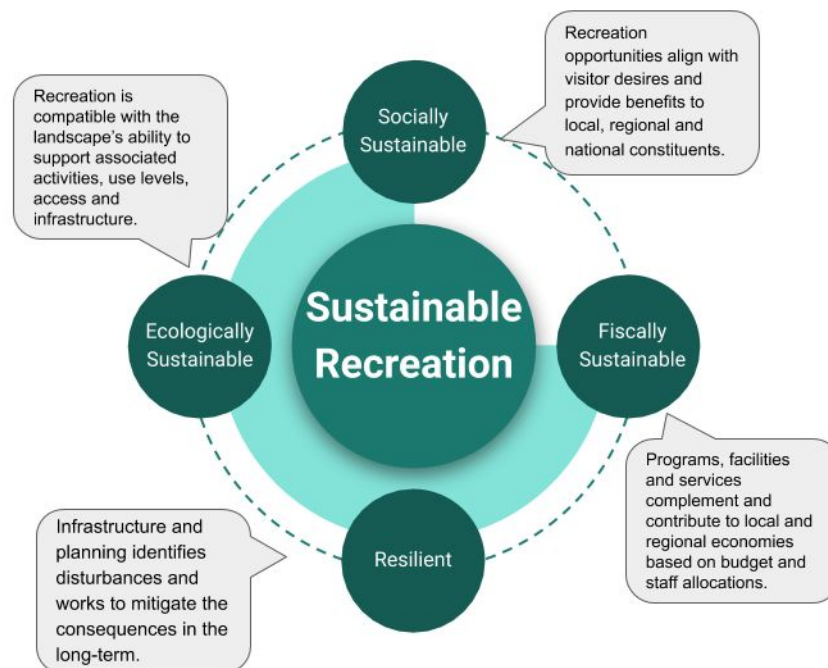


Figure 1.6. Four Components of Sustainable Recreation

What follows are more detailed descriptions of each element of sustainable recreation. Within these descriptions are decision guides for assessing when or how trails, campgrounds or other recreation infrastructure may contribute to sustainable recreation in the ERD.



## Environmental Sustainability<sup>1</sup>

To be considered environmentally sustainable, a recreation facility in the ERD should conform to USDA Forest Service National Quality Standards for Trails (USFS, 2009, 2353) and Campgrounds (USFS, 2018, 2334). By these standards, a trail or campground should not cause unacceptable damage to other resources.

For a trail or trail use to be environmentally sustainable, it should not:

- Contribute inappropriate levels of sediments to waterways.
- Cause unacceptable damage to wildlife, plants, or their habitats.
- Have any condition where the trail tread or structures are unstable or in jeopardy of failure.

For a campground (or specific site) to be environmentally sustainable, it should not:

- Contribute unacceptable levels of sediment, or waste or other contaminants into waterways.
- Cause unacceptable damage to wildlife, plants, or their habitats.
- Have unstable structures that may fail.

If any of these conditions exist, the trail or campground facility should be assessed for opportunities for repair, relocation, or potential decommissioning.

## Social Sustainability

Social sustainability as it relates to trails and campgrounds considers how well this infrastructure meets the needs of diverse user groups, with particular attention given to changing population demographics and recreation interests.

A trail system could be considered socially unacceptable if:

- There are serious conflicts among user groups, especially where user safety is concerned.
- User demand on the trail is greater than the infrastructure can support.
- Allowed trail uses are inconsistent with user interests.
- The system has numerous user-created trails.
- Trails are unused, overgrown or in disrepair.
- There is no interest among volunteer groups to improve conditions.

A campground (or specific site) could be considered socially unacceptable if:

- The campground or a site has limited or poor quality infrastructure or amenities (see campground evaluations for details).

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<sup>1</sup> Environmental, Social and Financial Sustainability descriptions informed by and adapted from the USDA Forest Service (2013) *Nantahala and Pisgah National Forests Non-motorized Trail Strategy*.

- The campground does not offer an adequate number of sites or amenities in line with user interests.
- There are few, if any, ADA accessible sites available.
- The campground or a site has fallen into disrepair, and there is no interest among volunteer groups to improve conditions or make repairs.
- The campground or a site has significant hazards that are costly to repair.

If any of these conditions are present and attempts at resolution are unsuccessful, the trail, campground or facility should be assessed for opportunities for relocation, a change in managed use, or potential decommissioning.

### Financial Sustainability

Trail and campground funding generally come from budget allocations, fees, and grants. These funds pay for overhead, salaries, environmental reviews, training, travel, fleet, equipment, materials and supplies, contracts, and every other aspect of managing a National Forest recreation program. The amount of funding available in any given year is far less than that needed to maintain the 260 miles of trails and 8 campgrounds in the ERD to national quality standards. Therefore, reliance on a volunteer workforce is essential. Nearly 70 percent of recreation sites are maintained or enhanced in some way by volunteers across the country (USFS, 2019).<sup>2</sup>

Whether considering maintenance or relocation of an existing trail or campground, or proposing a new facility, it could be considered financially sustainable if:

- Funding has been identified to support the proposed work.
- Volunteer groups are willing to make a commitment for routine maintenance.
- National Quality Standards for trails and campgrounds can be met with a combination of available funding and volunteer efforts.
- The District has sufficient capacity for economical operation and maintenance of the trail or campground/site.

If the District is struggling to meet these conditions for financial sustainability, it should assess the trail or campground/site for possible decommissioning.

### Resilience Capacity

To be considered resilient, infrastructure and planning must incorporate known disturbances and work to mitigate the consequences of these in the long-term. For the ERD to be resilient, the damage due to wildfire and budget cuts should be considered in all planning decisions. As in

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<sup>2</sup> Maintaining volunteers and partnerships have costs. Managing a volunteer workforce requires salary for District volunteer coordinators, as well as the cost of fleet, tools, training, safety equipment, and more. The actual per mile cost of trail maintenance or campground/site maintenance by Forest Service or volunteer crew is difficult to calculate. Contract maintenance or construction costs are easier to estimate and budget.

the case with social, environmental, and financial sustainability, resilience capacity must be considered both for regular maintenance and new infrastructure additions.

Decisions that support resilience include:

- Constructing large infrastructure, such as bridges, stairs, tables, and signs, with engineered, fire-resistant wood or steel.
- Establishing buffer zones for log-cuts along highly used roads.
- Establishing long-term partnerships with volunteer groups that will outlast potential employee turnover and/or budget cuts.
- Relocating or closing sites in flood-prone areas.
- Identifying funding sources outside regular budget allocations.
- Identifying new revenue generating opportunities by diversifying overnight options (e.g., lookouts and yurts).
- Considering fee increases at popular campgrounds to support maintenance.
- Educating users on the practices and justification of resiliency planning to create informed, empowered stewards of the ERD.
- Expanding the traditional norms of who recreates and how to serve visitors as demographics and recreation interests diversify.

## 1.6 Sustainable Recreation Strategy Goals

The sustainable recreation strategy is guided by five goals that outline long-term aims for the ERD to support the environmental, social, financial and resiliency of the district.

**Goal 1:** Provide recreation opportunities that are accessible to current and future visitors

**Goal 2:** Create a resilient natural, cultural and scenic environment that supports recreation for future generations

**Goal 3:** Partner with public and private groups to ensure safe and quality recreation opportunities that consider changing visitor interests

**Goal 4:** Implement shared stewardship to ensure sustainable decisions, sound investments, and accountability in all recreation planning

**Goal 5:** Communicate with the public and partners effectively to support long-term relationships and decision making

The recommendations section of this report returns to these goals with greater specificity describing site-specific priorities and district-wide recommendations that outline short and long term objectives and identify key roles for the ERD, shared stewardship partners, and other stakeholders.

## 1.7 Methods Overview

The sustainable recreation strategy recommendations and priorities are based on social and physical conditions data that were collected via interviews, surveys, and field-based trail and campground evaluations (Table 1.3).

*Table 1.3. Data Categories, Methods and Strategy Components*

<b>Data Category</b>	<b>Data Method</b>	<b>Strategy Components</b>
<i>Social</i>	Stakeholder Interviews	Goals, Social Priorities & Recommendations
	Open House	
	Online Story Map	
	Online Survey	
<i>Environmental</i>	Trail & Campground Evaluations	Trail & Campground Priorities & Recommendations
<i>Institutional Knowledge</i>	Staff Workshop & Interviews	Trail Priorities, Feature Rankings

The data collection methods used for the strategy are listed in sequence.<sup>3</sup> All social data collection methods were reviewed and approved by WWU's Institutional Review Board.

1. **Stakeholder interviews: Spring 2019-Fall 2019** — A total of 25 interviews were completed by the researchers with stakeholders identified primarily by the Forest Service recreation planner. These stakeholders represented environmental nonprofits, local government agencies, recreation interest groups, local business owners, as well as retired Forest Service staff who still reside locally. In addition to the list provided, participants were asked if they could recommend others to be interviewed. If new names were mentioned, the researchers contacted them. Interviews were conducted both in person and over-the-phone and lasted between 20 to 60 minutes. See Appendix A for more details.
2. **Online Story Map: Spring 2019-Fall 2019** — The online story map was initially published in the spring of 2019 concurrently with the USFS press release as a communication method for public engagement. A story map is an online presentation tool that incorporates text, maps, and images to bring readers through a narrative. In the fall, the story map became another data collection tool with the addition of interactive features that allowed users to submit information about their recreation behavior. In addition, the story map hosted a link where users could sign-up to receive a link to the online survey. See Appendix B for more details.

<sup>3</sup> Details about each method are available in the appendices.

3. **Field Condition Evaluations: Summer 2019/2020** — To determine the current condition of trails and campgrounds, the research team spent about nine weeks in the Entiat Ranger District. Given time and capacity constraints, the team had to limit their trail evaluations to those of highest priority to the ERD. Of the 57 trails in the district, 24 trails were evaluated. Trails and all campgrounds were evaluated with two separate criteria to identify damage, obstacles, and general conditions. The trail data was collected using tablets with ArcGIS spatial software and campground data was recorded on paper and later digitized. See Appendix C for more details.
4. **Initial Open Houses: Fall 2019** — Two open houses, one in Entiat, WA and the other in Wenatchee, WA, were held in October 2019 to gather more public input. About 25 people attended the Entiat meeting and about 10 attended the Wenatchee meeting. Each meeting began with short introductions from the research team and Forest Service staff before transitioning to self-guided activities that collected information from attendees about recreation behaviors, desired future recreation opportunities, and interactions with the Forest Service. See Appendix D for more details.
5. **Online Survey: Fall 2019** — The final data collection method was an online survey. The 21-question survey covered topics regarding current recreation preferences (activities and location of interest), barriers to recreation, attitudes regarding the purpose or desired outcomes of recreation, and demographics. The survey was available online in English and Spanish. Potential survey respondents came from three sources. First, the list of stakeholders used for the initial interviews and any additional contacts recommended by stakeholders. Second, a list of contacts collected by researchers during field evaluations through in-person intercepts. Finally, a list of email addresses of interested persons maintained by the Okanogan-Wenatchee National Forest. The survey was created using Qualtrics survey software and distributed through email. The survey was sent to 502 individuals; 161 responses were received, for a 32% response rate. See Appendix E for more details on the methods, and Appendix F for the survey instrument.
6. **Online Public Meeting: Spring 2020** — To communicate the initial draft strategy to the public, the research team and Forest Service staff hosted an online meeting via AdobeConnect. About 25 people signed into the virtual meeting for a project update and to share their first reactions to the strategy findings. The meeting was advertised through the same email lists as the online survey and through Forest Service social media. The purpose of the meeting was to allow the public to affirm or reject/question the results of the interviews, surveys, or open houses. See Appendix D for more details.

For detailed methods and results, please review the appendices and the Entiat Facilities Report.

## 1.8 Document Roadmap

The remainder of this report is designed as a guide for managers to use on a regular basis. Section 2 shares results from the social data sources: stakeholder interviews, open houses, and online survey. The results of these data are presented as major themes, and provide guidance for district-wide recommendations.

Section 3 details the field conditions evaluations along with the visitor priorities to develop trail scores and site-specific recommendations. Recreation infrastructure is presented by geographic zone, with subcategories for types of facility: trails, campgrounds, and future opportunities. Individual facilities within each zone are rated based on current condition<sup>4</sup> and popularity among recreators.<sup>5</sup> The findings provide guidance for site-specific recommendations.

Section 4 concludes the report with recommendations that align with the five sustainable recreation goals articulated in section 1.

## 2. Findings: Social Data

### 2.1 Interview Findings

Stakeholder interviews were the first phase of the social data collection and provided a general idea of the needs and concerns of community members related to the ERD. The topics identified in the interviews informed the themes presented in the October 2019 Open Houses and the online survey. Common themes included users' perception of the ERD as a "hidden gem" and the consequences of that, the appropriate role of the Forest Service and land managers, multiple versus single-use trails, specific recommendations for trail work/closures or additions, and the impact of wildfire on the landscape.

#### ***Entiat Ranger District as a "Hidden Gem"***

In response to questions two<sup>6</sup> and three<sup>7</sup> under the "Connection to ERD" section of the interview guide, many respondents expressed that they saw the ERD as a "hidden gem." Respondents phrased their response differently, but the theme was the same; their recreation experience is improved by the lack of crowds in the ERD due to its being lesser known.

*"We joke that if you're not from here, you need a guide to use the Entiat trails"* (Interview respondent 1).

Moreover, respondents expressed that not only is the ERD unknown, but the terrain and recreation opportunities it offers makes it clearly a "gem." Respondents mentioned the expert-level motorized trails, unique ecosystem of the district, and the personal connection they felt to the land. Multiple respondents made mention of family traditions and having generational ties to the ERD.

*"That valley is the lifeblood of my family"* (Interview respondent 2).

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<sup>4</sup> Methods for rating trail conditions can be found in Appendix G.

<sup>5</sup> Popularity among recreators was determined based on the results of the online survey and story map as well as data collected at open houses.

<sup>6</sup> Why is the ERD valuable to you/your organization?

<sup>7</sup> What makes the ERD valuable to the region?

While many respondents saw the “hidden” nature of the valley as valuable, others expressed a desire for the district to better advertise the recreation opportunities. With Chelan, Wenatchee and Leavenworth as neighbors, some saw an opportunity for ERD to join the ranks of these popular recreation centers. Respondents saw better advertising as a way to support the local economy.

*“The valley is a local secret, which makes it attractive. The ERD [managers] could be better ambassadors for the resources that are in the valley - the trails, campgrounds, recreational opportunities to draw more people in”* (Interview respondent 3).

*“There are several peaks on the Bulger Top 100 highest peaks in Washington list in the Entiat. These should be advertised. When I hear people talking about the ERD, they are usually talking about Silver Falls. There is so much more to the area”* (Interview respondent 4).

### **Role of the Forest Service**

In general, respondents felt the Forest Service was too under-resourced to properly manage the ERD. Most respondents expressed that they were well aware of the budget and staff reductions at all levels of the USFS. While respondents were generally sympathetic to the local managers, many called for better communication, more staff presence, clear plans for the future, and additional protections for natural resources.

Communication:

- Improvements to trail signs and maps
- Detailed reasons for closures and timelines for reopening
- Streamlined communication methods to indicate the status of trails (maintained, closed, needing maintenance, etc.)
- Broad education on the local ecosystem, fires, and historic USFS management

Staff presence:

Additional staff presence in the ERD in the form of snow rangers and trail crew was also suggested. Some respondents felt the lack of visibility of Forest Service managers made it difficult for them to understand their role or agency goals.

Plans for the future:

- Need for an updated Forest Management Plan; the outdated plan makes it difficult for the ERD to look ahead and set goals
- Need for a completed Travel Management Plan
- Need for a completed Winter Travel Management Plan

According to many respondents, the role of the USFS is to protect natural resources, even if that comes at a cost to recreationists. Respondents expressed specific concerns about the impact of fire on trail tread compounded with the high use by motorized users. Therefore, the Forest Service should prioritize preservation and fire management before recreation.



*“I am concerned with how the FS continues to make decisions based primarily on the status-quo rather than what is environmentally and financially sustainable. For example, creating snowshoe routes is far less expensive than maintaining groomed trails for snowmobiles and causes less environmental impact”* (Interview respondent 5).

However, other respondents felt the primary role of the USFS was to keep trails and recreation opportunities open under most circumstances. These respondents expressed that individuals should make their own decisions regarding issues like safety. Many of these respondents used the 2015 closures of the upper Entiat Valley as an example of the USFS overstepping their role in prescribing safety on others.

*“Why is the FS liable for what goes on in the forest? There is always danger, regardless of if there has been a fire or not”* (Interview respondent 6).

*“Trails and campgrounds represent a taxpayer investment therefore they should be accessible to taxpayers.”* (Interview respondent 7).

### **Multiple versus single-use trails**

Most respondents saw multi-use trails as a better way to serve all users. Respondents who did express frustration with multi-use trails were concerned about the environmental impact of motorized vehicles rather than user-conflicts. These respondents remarked that the terrain and soils of severely burned trails cannot endure high-impact activities like motor bikes. To some extent the same sentiment was expressed with regard to backcountry horse riding.

*“The level of motorized use is not conducive to long term environmental preservation. Ideally, management of motorized trails would be determined by the amount the ground can handle, not by how many people want to recreate”* (Interview respondent 5).

*“If areas were designated by user-group it would create a checkerboard of land and make it difficult for certain users to travel very far”* (Interview respondent 8).

Non-motorized winter users — snowshoers and cross-country skiers — were the only respondents to specifically ask for non-motorized trails. For these users, the snowmobiles were disruptive to their recreation experience and thus would prefer a few winter areas closed to motorized activities. These respondents also pointed out that non-motorized trails are less of an investment and lower impact on the environment than motorized trails, which require grooming.

### **Recommendations for Trail Work/Closures or Additions**

Many respondents had specific requests or recommendations to improve trail, site, or road infrastructure. The most common themes within this topic were the following:

- Improve road maintenance throughout the ERD
- Prioritize loop trail networks

- Provide more front-country trails like Silver Falls that are easily accessible to a wide range of visitors
- Develop more trails - motorized and hiking - near campgrounds that are accessible for children or less experienced recreationalists

Comments regarding specific trails or sites from respondents were included in the data processing for the Trail Popularity Score (Appendix G).

### **Impact of Wildfire**

The final major theme from the interviews was the consequences of fire for the ERD. For many, this was an emotional topic and brought about feelings of the inevitable changes to come for the Entiat. Other respondents generally acknowledged fire as just part of the Entiat's natural system and felt there were positive consequences as well.

*"Fire can really change, if nothing else, the way it [the ERD] looks. And so, you know, there's a whole cycle there. A feeling of loss and then, you know, it changes through time and maybe people don't go to those places anymore. Or if they do I feel like they start to recognize, some will start to recognize how that change has benefited [the place] - more flowers and more visibility" (Interview respondent 2).*

*"The trail will still be there after the fires pass through" (Interview respondent 9).*

Perhaps more significant to this strategy was respondents' opinions on how wildfire should or should not affect recreation. Respondents expressed varying thoughts on the role of the Forest Service with regard to protecting the safety of users from post-fire hazards. Many respondents felt hazards like snags and logs across the road/trail were bothersome, but not a reason to close opportunities.

Respondents also expressed frustration with the lack of communication that accompanies fire-related closures. Many said that the Forest Service inadequately notifies the community of post-fire closures or maintenance, leaving them unaware of the current status of many trails. These responses mirror those discussed in the "Role of the Forest Service" section above.

*"Since wildfires, people are unsure how much of the trail system is still intact; they are not sure what they'll run into, what infrastructure (bridges) are still there or not" (Interview respondent 10).*

The stakeholder interviews provided initial insights into what representative groups considered to be issues, concerns, and challenges facing the ERD. The major themes from the interviews informed the data collection methods for the open houses, which took place in October 2019.

## 2.2 Open House Findings

The goal of the open houses was to collect insights and perspectives from attendees about their recreation activities, their agreement with key recreation values, and opportunities for Forest Service/public collaboration. Appendix D outlines the agenda and process in greater detail. This section describes findings from the four input stations.

Stations 1 and 2 asked attendees to indicate on a map where they recreate, the types of activities they engage in and where they would like to see future activities developed or restored. A total of 50 unique places were identified on the maps provided, along with 19 different activities (Figure 2.1). The data collected from the open house stations was combined with similar data collected in the online survey and the online Story Map to create the popularity ranking for the final trail score. Details and tables showing specific mentions for trails, sites, and roads across all data collection methods are available in Appendix H.

Station 3 collected input about major recreation values that were drawn from the stakeholder interviews. Table 2.1 shows the outcome of this activity. There was *complete agreement* about keeping trails open, providing recreation opportunities based on user needs and desires, and valuing the ERD for its solitude and seclusion. A majority of attendees *agreed* about providing multiple recreation uses on the ERD, designating different areas for specific uses (e.g., non-motorized), and determining recreational access by environmental impact/sustainability. And a majority *disagreed* with the statement about closing trails or sites for environmental protection/restoration. Finally, respondents had *mixed responses* to whether there should be a greater emphasis on advertising the ERD to attract more visitors to the area. About half of the open house attendees appreciate the ERD because it is a “hidden gem;” a sentiment that was also heard in the stakeholder interviews. While others felt like more advertising would help boost the local economy.

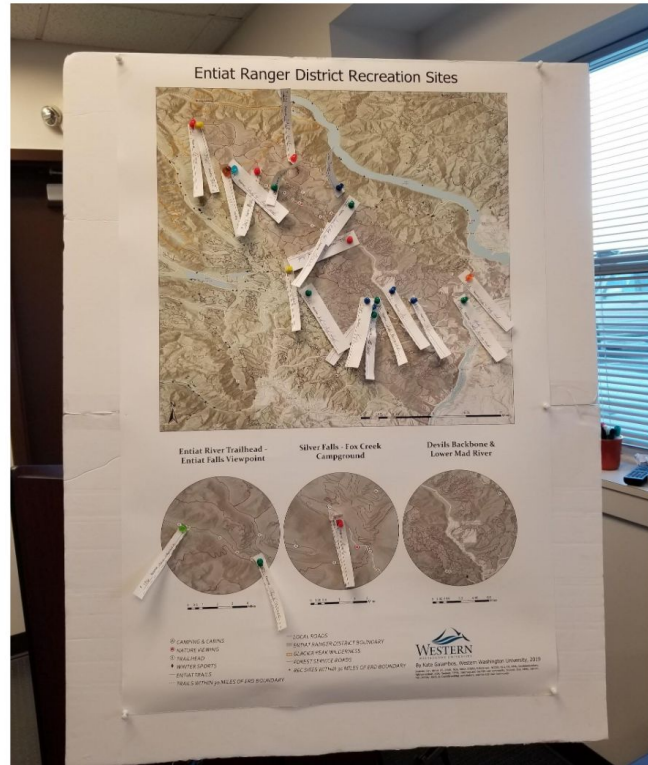


Figure 2.1. Station 1 Exercise - Identifying Recreation Locations & Activities in the ERD (Credit: Laninga)

Table 2.1. Open House Station 3 Responses to Recreation Value Statements

Level of Agreement	Value Statements
<i>Complete</i>	<ul style="list-style-type: none"> <li>• All current trails should be open and maintained</li> <li>• Accessibility to recreation in the district should be determined based on user needs and desires</li> <li>• Part of the value of the ERD is the lack of crowds and seclusion</li> </ul>
<i>Majority</i>	<ul style="list-style-type: none"> <li>• Recreationists are better served by a district full of multiple use areas (agreement)</li> <li>• Recreationists are better served by a district with some areas designated based on activity (agreement)</li> <li>• Accessibility to recreation in the district should be determined by the degree of environmental impact and ecological sustainability/longevity (agreement)</li> <li>• Some trails should be closed for the purpose of environmental/ecological protection/restoration (disagreement)</li> </ul>
<i>Mixed</i>	<ul style="list-style-type: none"> <li>• Recreation opportunities in the ERD should be more widely advertised to bring more people and tourism dollars to the community.</li> </ul>

The final station asked attendees to consider opportunities for collaboration between the community and the USFS. Table 2.2 shows the comments collected from attendees. There are several actions the community/public can take for the ERD specifically, and the Forest Service, in general: volunteer through organized groups; provide public input in decision-making processes; and support the district and the agency with money through local opportunities like day and annual passes and campground fees, and through advocacy to elected officials to request greater federal appropriations for recreation.

Attendee comments related to what the community needs from the Forest Service are categorized into three common themes: Communication, Management, and Volunteering/Partnerships. The public would like clearer communication about closures and other actions on the ERD, as well as online updates on current trail/site conditions. Attendees had several management suggestions that ranged from general issues related to safety and enforcement to maintaining trails and campgrounds, to more specific requests including allowing for wheeled all-terrain vehicles (WATVs) on all roads and trails, developing a wider range of trail difficulty levels, providing more hiker-only or non-motorized trails and non-powered winter recreation opportunities, and adding ADA accessible trails and campsites. Additional management suggestions mentioned were the request for a dedicated horse camp, one hundred foot buffers along roadways to reduce road blocks from downed trees, and firewood gathering permits along roadways in burned areas. Finally, attendees suggested ideas for the ERD related to volunteers and partnerships. These include offering training opportunities in the use of chainsaws and other trail maintenance equipment, and having maintenance tools available for volunteer groups to borrow.

Table 2.2. Ways the Forest Service and Community can Support Each Other

Forest Service needs from Community	Community needs from Forest Service
<ul style="list-style-type: none"> <li>Names of individuals/groups for volunteer opportunities</li> <li>Designated volunteer coordinators from organized groups to work with Forest Service</li> <li>Consistent public input</li> <li>Direct funding (e.g., annual passes, campground fees, day passes)</li> <li>More support/enthusiasm from public to demand funding for recreation</li> </ul>	<p><i>Communication:</i></p> <ul style="list-style-type: none"> <li>About closures and other actions on the district</li> <li>Access to current trail conditions with online maps</li> </ul> <p><i>Management:</i></p> <ul style="list-style-type: none"> <li>Safety &amp; enforcement</li> <li>Trail (e.g., address erosion) and campground maintenance</li> <li>WATV use on all existing roads and trails</li> <li>Address e-bike issues</li> <li>Hiker-only Trails/Non-motorized trails</li> <li>Provide a diversity of trail difficulties</li> <li>Add ADA accessible trails and campgrounds</li> <li>Non-powered winter recreation (e.g., snow shoe, cross country ski, fat bike)</li> <li>Dedicated Horse Camp</li> <li>Mushroom Hunting</li> <li>Cleared buffers along access roads (e.g., 100 ft on each side)</li> <li>Firwood gathering areas along roads in burn areas</li> </ul> <p><i>Volunteering opportunities &amp; partnerships:</i></p> <ul style="list-style-type: none"> <li>Training in chain saw use and other equipment/tools</li> <li>Volunteer access to tools for trail work</li> </ul>

## 2.3 Online Survey Findings

To ensure we reached a broad set of constituents who visit the ERD, an online survey was made available to the public from October to December, 2019. An invitation and unique link to complete the survey was sent to 502 individuals. Because the intent was to include both current and potential new ERD recreationists, many respondents had not yet recreated on the ERD. Those who did not respond to the initial invitation received two follow-up invitations about one-week apart. Ultimately, 161 responses were received, for a 32% response rate. That response rate is consistent with other population surveys administered in recent years. Survey methods, including sampling and distribution are located in Appendix E; the survey instrument can be found in Appendix F. In this section, general findings are presented from the survey results.

## Demographics

Forty percent of survey respondents have been visiting the ERD for over 20 years, and 40% visit the district four or more times a year. The demographics, shown in Table 2.3, skewed male (66%), whiter (89%), older (55% over 55 years old) and English-speakers (93%). Nearly 15% of respondents have a second home in Chelan County. When asked about willingness to pay a fee to access recreation in undeveloped areas of the ERD, 46% of respondents answered in the affirmative.

*Table 2.3. Online Survey Demographics*

<b>Gender</b>	<b>Percentage</b>
Male	66.13
Female	33.06
Other	0.81
<b>Ethnicity/Race</b>	<b>Percentage</b>
White	88.81
Black/African American	0.00
American Indian/Alaska Native	2.24
Asian	0.00
Native Hawaiian/Pacific Islander	0.75
Hispanic, Latino, Spanish	1.49
Middle Eastern/North African	1.49
Other	5.22
<b>Age</b>	<b>Percentage</b>
18-24	2.34
25-34	5.47
35-44	19.53
45-54	17.19
55-64	28.19
65+	26.56
<b>Language</b>	<b>Percentage</b>
English	93%

<b>Spanish</b>	4%
<b>2nd Home Ownership in Chelan Co?</b>	<b>Percentage</b>
Yes	14.29
No	85.71
<b>Pay Fee for Undeveloped Recreation?</b>	<b>Percentage</b>
Yes	46.40
No	25.60
Not Sure	28.00

### Locations & Activities

When asked where they go in the ERD, respondents collectively identified 36 unique locations that they visit. These included trails, campgrounds and other sites, and roads. The most frequently mentioned locations included Cottonwood Campground, Entiat River Trail, Glacier Peaks Wilderness Area (which includes most of the Entiat River Trail), Mad River (lower and upper), North Fork of the Entiat River, and Silver Falls Trail. The most frequently mentioned activities were hiking, backcountry camping, scenic driving, and nature viewing. For more details about where these visitors go and the activities they engage in, please view Appendix H.

### Issues Influencing Recreation

The survey asked about a number of issues and the degree to which they currently influence recreation in the ERD, with options ranging from “not a problem” to a “big problem.” Table 2.4 shows the results. It is evident that generally, none of these issues were a big problem in the ERD. Notably, over 50% of respondents did not think that “too many people,” “availability of parking,” and “availability of restrooms” were each “not a problem.”

*Table 2.4. Issues Potentially Influencing Recreation in the ERD*

#	Question	Not a problem		Small problem		Moderate problem		Big problem		Total	
1	Condition of roads	35.78%	39	33.03%	36	21.10%	23	10.09%	11	109	
2	Too many people	50.00%	55	24.55%	27	20.91%	23	4.55%	5	110	
3	Availability of parking	56.07%	60	28.04%	30	14.02%	15	1.87%	2	107	
4	Site closures due to hazardous conditions	30.56%	33	24.07%	26	27.78%	30	17.59%	19	108	
5	Site closures due to environmental restoration projects	45.79%	49	25.23%	27	21.50%	23	7.48%	8	107	
6	Change in scenery after wildfires	46.36%	51	11.82%	13	23.64%	26	18.18%	20	110	
7	Lack of accessibility within the ranger district in general	37.04%	40	31.48%	34	20.37%	22	11.11%	12	108	
8	Lack of information about the ranger district in general	41.44%	46	22.52%	25	23.42%	26	12.61%	14	111	
9	Lack of adequate trail markers	29.46%	33	35.71%	40	22.32%	25	12.50%	14	112	
10	Availability of restrooms	64.86%	72	21.62%	24	12.61%	14	0.90%	1	111	
11	Other (Please specify)	28.57%	8	7.14%	2	25.00%	7	39.29%	11	28	



### Desirable/Undesirable Characteristics of the ERD

The survey asked respondents about how desirable or undesirable a number of characteristics or resources were for a future visit to the ERD. Table 2.5 shows all the responses.

Those characteristics that received over 50% for “desirable” or “very desirable” were:

- Multiple use trails
- Rangers on patrol
- Pit toilets at backcountry campsites
- Directional signs
- Bridges across creeks
- Single-use trails

The only response that received over 50% as being “undesirable” or “very undesirable” was “a few trees blown down across the trail.”

*Table 2.5. Desirability of ERD Characteristics/Resources*

#	Question	Very undesirable	Undesirable	Neither	Desirable	Very desirable	Total
1	A few trees blown down across the trail	9%	44%	41%	4%	2%	129
9	Multiple-Use Trails	9%	18%	24%	28%	21%	128
11	Rangers on patrol	4%	7%	34%	41%	14%	128
4	Pit toilets at backcountry campsites	3%	13%	34%	35%	14%	127
3	Directional signs	2%	3%	24%	57%	14%	127
6	Prohibiting campfires in the backcountry	18%	24%	29%	14%	15%	127
2	Bridges across creeks	2%	2%	17%	59%	21%	126
7	Visible burn areas	2%	17%	70%	8%	3%	126
8	Having designated campsites in the backcountry	11%	17%	29%	38%	5%	125
5	Food boxes at campsites	7%	10%	48%	30%	6%	124
10	Single-Use Trails	16%	9%	24%	37%	14%	123

### ERD's Purpose

The survey asked respondents about several purposes for the ERD and their level of importance. Table 2.6 shows the results. Those responses that were rated at 50% or higher as either “important” or “very important” were as follows:

- A place for recreation
- A place to spend time with family
- A place for wildlife protection
- A place for wilderness protection
- A place for adventure
- A place for remoteness and isolation
- A place for quiet and natural sounds
- A place to escape daily stress

Table 2.6. Purpose of the ERD based on Level of Importance

#	Question	Not at all important	Slightly important	Moderately important	Very important	Total
1	A place for recreation	0.00%	3.10%	20.16%	76.74%	129
2	A place to spend time with family	0.78%	8.53%	26.36%	64.34%	129
3	A place for exercise	3.15%	19.69%	29.13%	48.03%	127
4	A place for wildlife protection	6.20%	11.63%	22.48%	59.69%	129
5	A place of high economic value for tourism and guiding	27.20%	40.00%	20.00%	12.80%	125
6	A place for wilderness preservation	9.38%	21.88%	19.53%	49.22%	128
7	A place to learn about history and cultural heritage	16.54%	37.01%	29.92%	16.54%	127
8	A place for adventure	2.34%	12.50%	33.59%	51.56%	128
9	A place for remoteness and isolation	2.34%	10.94%	36.72%	50.00%	128
10	A place for quiet and natural sounds	7.03%	15.63%	25.00%	52.34%	128
11	A place to escape daily stress	2.34%	14.84%	27.34%	55.47%	128
12	A place to understand the effects of climate change	39.06%	19.53%	21.09%	20.31%	128
13	A place that protects water and air quality	7.81%	18.75%	26.56%	46.88%	128
14	A place absent of human impacts	25.98%	26.77%	21.26%	25.98%	127

### Most Recent Visit

Respondents were asked to state the location of their most recent visit to the ERD. For this question, there were 48 unique locations mentioned. The most frequently mentioned locations were Silver Falls, Mud Creek, Mad River (lower/upper), and the North Fork of the Entiat River.<sup>8</sup>

In addition to knowing where people visited, we also received information about the length of their visit, factors that influenced it, and both their level of satisfaction with and the degree of importance regarding recreational services available. Nearly half of the respondents (47%) spent between a half and a full day in the ERD on their most recent visit, while another 40% spent two or more days in the District.

Respondents were asked if any number of factors influenced their visit, including: traffic congestion, parking congestion/shortages, weather, wildfires, site closures, lack of accessibility for people with disabilities, road conditions or closures. The majority of respondents selected that none of these factors influenced their visit. The only factors that got close to 30% of respondents in the “somewhat” or “to a great extent” categories were: weather (32%), wildfires (31%), and road conditions/closures (28%).

Another set of questions asked respondents to consider recreation services and facilities in terms of their level of satisfaction and the degree of importance for their visit. These items included the following:

- Scenery at the site
- Condition of the natural environment

<sup>8</sup> Locations listed in this question were combined with data collected from the open houses and Storymap to determine the social popularity index, used to calculate trail scores. For more information about this, please see Appendices G and H.

- Available parking
- Cleanliness of restrooms
- Conditions of developed recreation facilities
- Condition of roads
- Condition of trails
- Feeling of safety
- Helpfulness of employees
- Availability of interpretive/educational displays, signs, and exhibits
- Value of the fee paid
- Availability of information on recreation opportunities
- Adequacy of signage to destination
- Accessibility for people with disabilities

The majority of respondents were “somewhat” or “very satisfied” with all of the items listed. However it is worth noting that about 15% of respondents were either “somewhat” or “very dissatisfied” about the condition of roads, and 63% of respondents scored this item as “important” or “extremely important.” Seventeen percent were either “somewhat” or “very dissatisfied” with the condition of trails and 77% of them scored this item as either “important” or “extremely important.” Eighteen percent of respondents were either “somewhat” or “very dissatisfied” with the adequacy of signage to the destination and 53% stated that this item was “important” or “very important.” Finally, while 56% of respondents selected that accessibility for people with disabilities was not applicable to them, over a quarter of respondents (26%) stated that it was an “important” or “very important” facility to provide.

### **Sites No Longer Visited**

Respondents were also asked to share sites they no longer visit. Respondents were allowed to type in their answer for the location and then select from a list of possible reasons. The most cited location was the Entiat River Trail (5 mentions) followed by Cottonwood Campground (3 mentions). No other sites were mentioned more than once. The most cited reason was “poor site conditions,” the second was “closure,” and the third was “wildfire.”

### **Frequency of Visits to Specific Sites**

The final section of the survey asked respondents about specific sites in the ERD and the number of visits to them in the last 12 months (e.g., Fall 2018 through Fall 2019). The list of sites was Myrtle Lake, Mad Lake, Silver Falls Trail, North Fork Trail and Ice Lakes. Table 2.7 shows the frequency of visits to these specific locations in the ERD. While the majority of respondents did not visit any of these locations within the last year, both the Silver Falls and North Fork Trails were the most frequently visited, at 1-3 times a year.

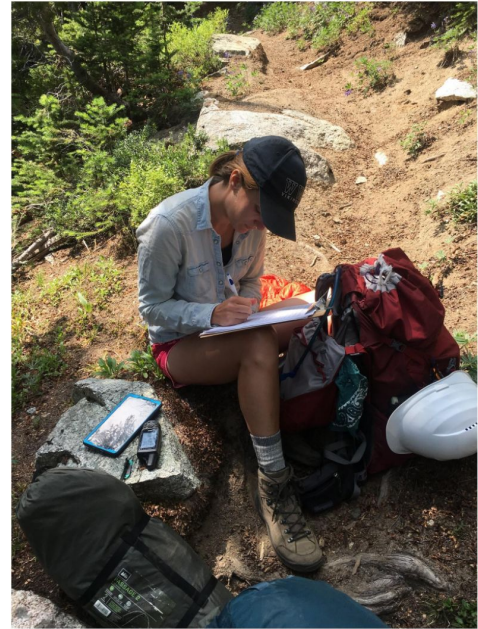
*Table 2.7. Frequency of Visits to Sites in the ERD in the last 12 months (Fall 2018-Fall 2019) (N=106)*

<b>Location</b>	<b>None</b>	<b>1-3 Times</b>	<b>4-6 Times</b>	<b>7-9 Times</b>
Myrtle Lake	67%	32%	1%	0%
Mad Lake	67%	28%	4%	1%
Silver Falls Trail	46%	41%	12%	1%
North Fork Trail	58%	40%	2%	1%
Ice Lakes	80%	16%	2%	0%

### 3. Findings: Recreation Infrastructure

Findings from the field evaluations for trails and campgrounds are reviewed in this section. Figure 3.1 shows a researcher completing a trail conditions evaluation. In addition, this section includes site-specific and future recreation recommendations, and identifies stewardship opportunities for volunteer groups and partners.

The facilities are organized by geographic zone. Not all sites within each zone are included. Rather, only the facilities evaluated by the research team and mentioned in the social data sources above are described. These sites are the focus of this strategy as they have been completely evaluated based on the principles of sustainable recreation. By focusing on these sites, the strategy outlines recommendations based on multiple data sources, both social and environmental. Two trails were evaluated, but not mentioned by respondents: Garland Peak and Pyramid Creek. Information collected during the field evaluations is available in the Entiat Facilities Report. Additionally, several sites that researchers did not evaluate were mentioned by respondents. These sites are noted on the map available in Appendix H.



*Figure 3.1. Conducting trail conditions evaluation, Summer 2019. (Credit: Gregory)*

If a trail crossed multiple zones, it is included in the zone where the most frequently accessed trailhead is located. For example, the Lower Mad River trailhead is located in zone 1, but ends in zone 2; the main trailhead is located in zone 1, so it is included in that zone's facility descriptions.

In addition to the rating system, specific details regarding the condition of each facility evaluated are in the Entiat Facilities Report. These records provide details such as mile-by-mile trail summaries and site-by-site campground evaluations. These data informed the rating system. Beyond understanding the rating systems, managers can use these documents to plan specific facility maintenance.

Table 3.1 is a key to the table columns, defining class, current conditions, user popularity, trail score, current condition priority and user popularity priority.

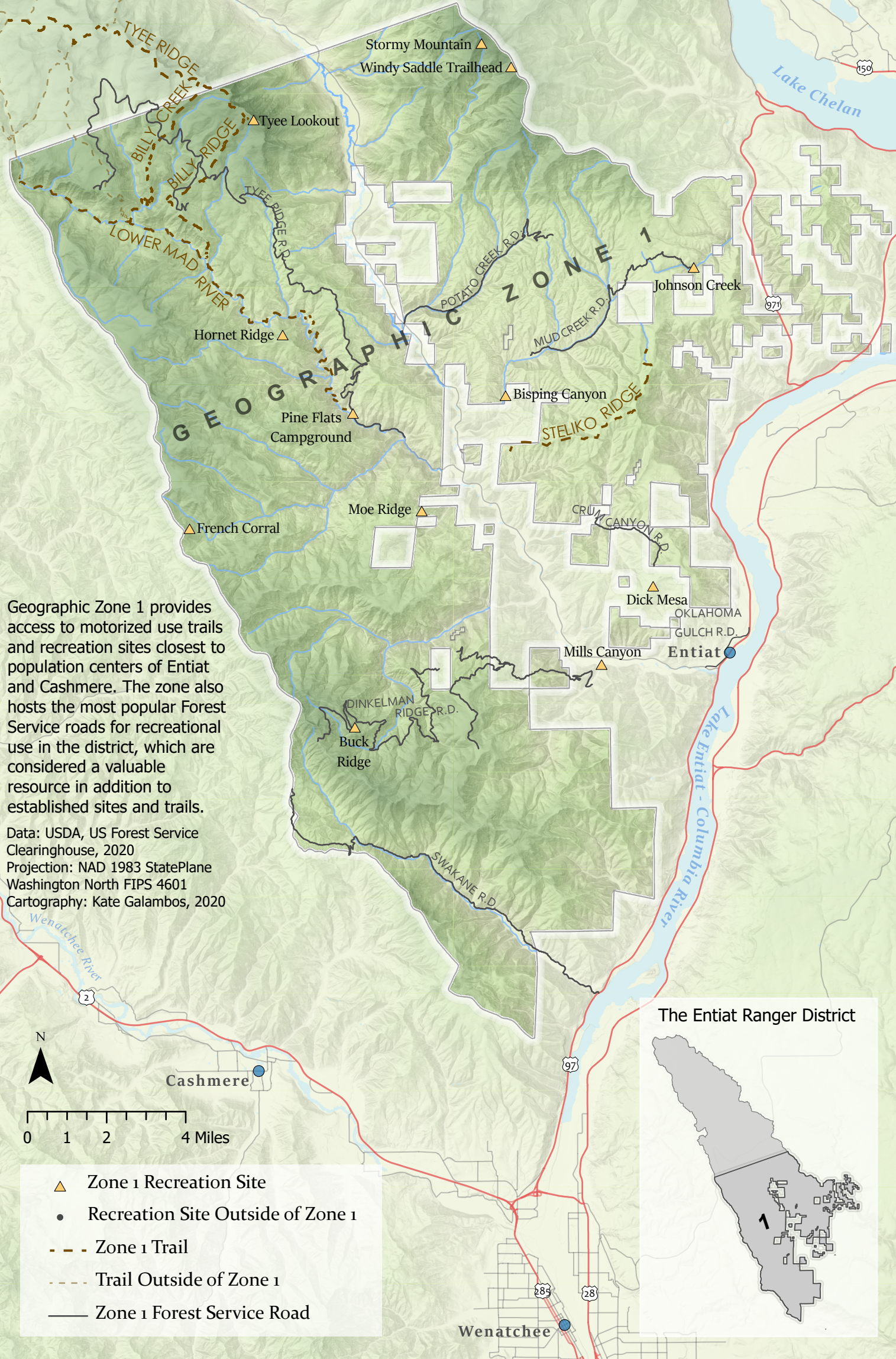
Table 3.1: Geographic Zone Findings Key

Index	Description
Class	Based on the USFS trail classification system. Indicates the development level of each trail. Classes are listed from 1 (minimally developed) to 5 (fully developed).
Current Condition	An index created based on the field data that represents the current conditions of recreation infrastructure. The index ranges from 3 (minimal infrastructure issues) to 15 (maximum infrastructure issues). This index should be taken into consideration along with the designated class as higher class trails are more developed and therefore more likely to have infrastructure issues. <i>Refer to Appendix G for more information.</i>
User Popularity	An index created based on the frequency of mention of the trail/site between the social data sources: online survey, story map, and open houses. A user popularity score of 1 indicates the site/trail was mentioned infrequently. A score of 4 indicates a frequently mentioned site/trail. <i>Refer to Appendix G for more information.</i>
Trail Score	Current Condition x User Popularity



# Entiat Ranger District: Geographic Zone 1

*Produced for the Sustainable Recreation Strategy*





### 3.1 Geographic Zone 1: Lower Valley

- Landscape: Human developed land mixed with temperate-boreal grassland/shrub, semi-desert grassland/shrub, and temperate-boreal forest/woodland.
- Total Trail Miles Evaluated: 36.2
- Trail Types Available: Motorized/Multiple Use
- Most Popular Activity: OHV

Table 3.2 lists the trails in the Lower Valley and their scores, Table 3.3 describes winter recreation trails, and Table 3.4 lists the campgrounds. Site-specific recommendations for trails and campgrounds are listed in Table 3.5

#### 3.1.1 Zone 1: Trails

*Table 3.2 Scores for Trails in the Lower Valley (Zone 1)*

Name, #	Class	Current Condition	User Popularity	Trail Score
Billy Ridge, 1413	3	12	1	12
Blue Creek, 1426	3	10	2	20
Lower Mad River, 1409	3	13	4	52
Tyee Ridge, 1415	3	3	4	12

The *Trail Score* indicates that the Lower Mad River Trail should be the top priority for the Lower Valley. Much of this trail is in poor and dangerous condition, giving it one of the highest current condition ratings in the district. However, it is also ranked as “most popular” and therefore is a favorite among users. It requires significant financial investments, but the public would like to see this trail repaired. Tyee Ridge is also ranked as “most popular.” However, the current condition rating is very low meaning the trail requires nearly no maintenance or financial investment. Tyee Ridge should not be a top priority. Blue Creek and Billy Ridge have similar current condition ratings, requiring a moderate amount of maintenance. Blue Creek should take priority over Billy Ridge, as it is more popular among users.

In addition to the trails maintained in the non-snow seasons, Entiat has the following established winter trails, which connect to either the Wenatchee River or Chelan Districts. These trails are open to motorized and non-motorized winter recreation, however the majority of the use is motorized. These trails are regularly groomed through an agreement with a partner organization. Winter trails are listed primarily as reference, rather than as part of the analysis for this strategy. These trails were not evaluated in the same manner as the rest of the trails in this strategy.

*Table 3.3 Winter Trails (not all are in the Lower Valley)*

<b>Name, #</b>	<b>Miles</b>
French Corral-Ardenvoir, 1470	10
Moe Ridge, 1471	14
French Corral-Entiat Ridge Loop, 1472	15
Miners Ridge Loop, 1473	5
Indian Creek/Gold Ridge, 1474	11
Entiat Valley-Shady Pass, 1475	20

### 3.1.2 Zone 1: Campgrounds

*Table 3.4 Campground Findings in the Lower Valley (Zone 1)*

<b>Name</b>	<b>Sites</b>	<b>Restrooms</b>	<b>Picnic Table</b>	<b>Fire Ring</b>	<b>Hazards/Major Issues</b>
Pine Flats	6 sites, plus 1 group site	2 - fair condition	Metal legs, wooden benches & top	Standard grill rings	Regular vegetation maintenance

### 3.1.3 Zone 1: Lookouts

Two lookouts are being made available for overnight rentals. Steliko is currently available for nightly rentals and Tyee is expected to be available in the coming year. Potential partners to support the lookouts include the Forest Fire Lookout Association or Access Entiat.

Table 3.5 outlines specific recommendations for Zone 1 trails and campgrounds. Additional information on each trail and campground is also available in the Entiat Facilities Report.

### 3.1.4 Zone 1: Site-Specific Recommendations

*Table 3.5 Recommendations for Trails & Campgrounds in the Lower Valley (Zone 1)*

<b>Trail Name #</b>	<b>Recommendation(s)</b>
Billy Ridge, 1413	<ul style="list-style-type: none"> <li>-Improve signs at Tyee Lookout Trailhead to indicate where the trail starts</li> <li>-Focus maintenance on lower half of trail (below NF-5700)</li> <li>-Regular logouts in burned area (~mile 3-5)</li> <li>-Clear vegetation overgrowth (~mile 4+) to make trail easier to follow</li> </ul>

Blue Creek, 1426	-Repair concrete trellising throughout -Regular maintenance of concrete trellising -Remove shelter debris
Lower Mad River, 1409	-Repair major unimproved crossings of Mad River (mile 9,11) -Repair or reroute trail at washout (mile 11) -Route trail away from Mad River (mile 3) -Regular logouts in burned area (~mile 10+)
Tyee Ridge, 1415	-Potential need for minor, annual logouts in burned area (~mile 2-3)
<b>Campground</b>	<b>Recommendation(s)</b>
Pine Flats CG	-Improve or eliminate site 5 (currently too small & overgrown) -Improve group site signage

### 3.1.5 Zone 1: Future Opportunities

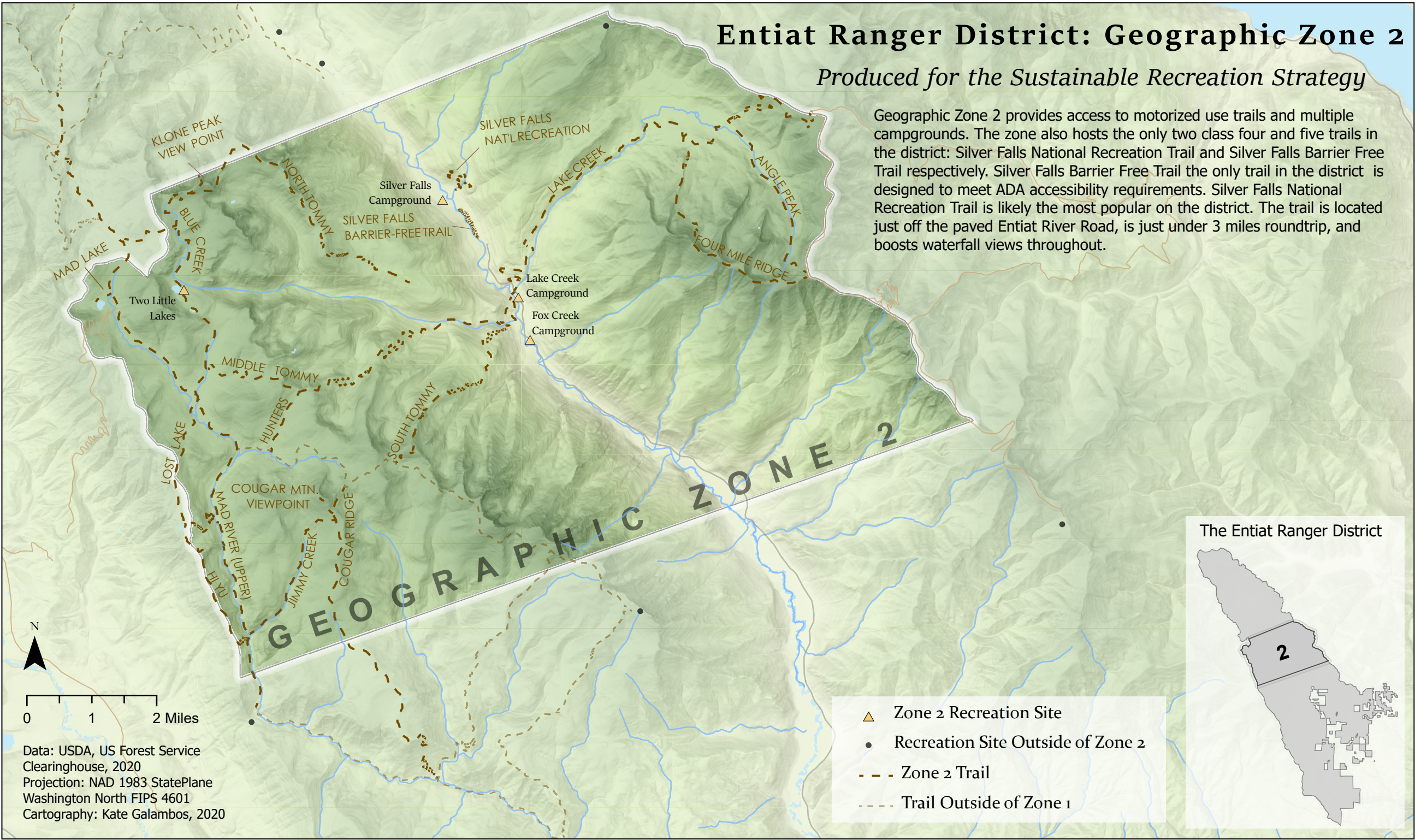
- Winter non-motorized recreation:
  - Close Potato and Mud Creek roads to motorized use and establish small, marked parking areas for snowshoers and cross-country users.
- Construct backcountry sites at Two Little Lakes
- Open Tyee Lookout to summer rentals
- Improve NF 5700 to make Tyee Lookout more accessible
- Increase awareness of lookout rentals as an additional overnight opportunity



# Entiat Ranger District: Geographic Zone 2

*Produced for the Sustainable Recreation Strategy*

Geographic Zone 2 provides access to motorized use trails and multiple campgrounds. The zone also hosts the only two class four and five trails in the district: Silver Falls National Recreation Trail and Silver Falls Barrier Free Trail respectively. Silver Falls Barrier Free Trail the only trail in the district is designed to meet ADA accessibility requirements. Silver Falls National Recreation Trail is likely the most popular on the district. The trail is located just off the paved Entiat River Road, is just under 3 miles roundtrip, and boosts waterfall views throughout.



Data: USDA, US Forest Service  
Clearinghouse, 2020  
Projection: NAD 1983 StatePlane  
Washington North FIPS 4601  
Cartography: Kate Galambos, 2020



## 3.2 Geographic Zone 2: Middle Valley

- Landscape: Some human development mixed with semi-desert scrub and grassland, temperate and boreal forest/woodland.
- Total Trail Miles Evaluated: 52.9
- Trail Types Available: Motorized, Hiker Only
- Most Popular Activity: OHV

Table 3.6 lists the trails in the Middle Valley and their scores, Table 3.7 describes the campgrounds. Site-specific recommendations for trails and campgrounds are provided in Table 3.8.

### 3.2.1 Zone 2: Trails

*Table 3.6 Scores for Trails in the Middle Valley (Zone 2)*

Name, #	Class	Current Condition	User Popularity	Trail Score
Hi Yu, 1403	3	11	1	11
Lake Creek, 1443	3	10	4	40
Mad Lake, 1406	3	8	4	32
Mad River (Upper), 1409.1	3	7	4	28
Middle Tommy, 1424	3	7	3	21
North Tommy, 1425	3	8	2	16
Silver Falls Barrier-Free, 1462	5	12	1	12
Silver Falls National Rec. Trail, 1442	4	15	4	60
South Tommy, 1423	3	10	1	10

Managers should prioritize accessibility options in this zone as it is home to the most developed trails in the district. The Silver Falls National Recreation trail is a good opportunity for inexperienced users or those with limited time to travel to recreation opportunities. Additionally, the Silver Falls Barrier-Free trail is the only ADA-designed trail in the district. Managers should prioritize this trail. In its current state, the barrier-free trail is not accessible and therefore must be the first priority of Geographic Zone 2 in order to meet the social sustainability goals of this strategy.

Beyond the highly developed trails, managers should invest in the Upper Mad River trail. Not only is it popular among users, but it serves as a connector to many of the most popular motorized trails in the district.

### 3.2.2 Zone 2: Campgrounds

*Table 3.7 Campground Findings in the Middle Valley (Zone 2)*

Name	Sites	Restrooms	Picnic Table	Fire Ring	Hazards/Major Issues
Fox Creek	16	2 - good condition	Metal legs, wooden benches & tops	Standard grill rings	No major issues
Lake Creek	19 listed, 18 found	2 - good condition 1 - old, should be removed	7 - all wood, need replacing 11 - metal legs, wooden benches & tops	Standard grill rings	Burn hazard from dense vegetation; erosion/flooding from Lake Creek
Silver Falls	-32 listed, 30 found - unmarked picnic area - 1 large group site with CCC shelter	6 - fair to good condition	Wood - in moderate to good shape	Standard grill rings  Sites 5, 6 & 20 have CCC structures	Regular vegetation maintenance

Table 3.8 outlines specific recommendations for Zone 2 trails and campgrounds. Additional information on each trail and campground is also available in the Entiat Facilities Report.

### 3.2.3 Zone 2: Site-Specific Recommendations

*Table 3.8 Recommendations for Trails & Campgrounds in the Middle Valley (Zone 2)*

Trail Name, #	Recommendation(s)
Hi Yu, 1403	-Improve signage at Lost Lake junction for Hi Yu -Repair severe trenching and erosion (~mile 2-3) -Regular logcut throughout
Lake Creek, 1443	-Repair whoopsies (~mile 9-10) -Repair severe trenching throughout -Improve signage at junction with 5900 for clearer trail route -Construct crossing over Lake Creek (~mile 4)
Mad Lake, 1406	-Continued maintenance of culverts and improved crossings

Mad River (Upper), 1409.1	<ul style="list-style-type: none"> <li>-Add sign for junction with Three Creek and Garland Peak trails</li> <li>-Construct crossing at Mad River (~mile 2.75)</li> <li>-Construct crossing at Mad River and Whistling Pig Creek (~mile 3)</li> <li>-Construct crossing at Blue Creek (~mile 4)</li> <li>-Regular maintenance of concrete trellising throughout</li> </ul>
Middle Tommy, 1424	<ul style="list-style-type: none"> <li>-Construct crossing at Blue Creek</li> <li>-Construct crossing at Tommy Creek</li> <li>-Regular maintenance of trenching and whoopies throughout</li> </ul>
North Tommy, 1425	<ul style="list-style-type: none"> <li>-Repair severe trenching (~mile 3-6)</li> <li>-Regular maintenance of concrete trellising throughout</li> <li>-Regular logout, especially for ~mile 1-5</li> </ul>
Silver Falls Barrier-Free, 1462	<ul style="list-style-type: none"> <li>-Repair pavement throughout to meet ADA standards</li> <li>-Permanently close trail section that is temporarily closed for habitat protection</li> <li>-Clean interpretive trail signs</li> <li>-Post signage at Silver Falls trailhead and campground about the trail</li> <li>-Interpretation opportunity with ranger, volunteer group or camp host</li> </ul>
Silver Falls National Rec. Trail, 1442	<ul style="list-style-type: none"> <li>-Repair handrails throughout</li> <li>-Add interpretive signs at waterfall viewpoints and include info on the harms of user trails to discourage trail cutting</li> </ul>
South Tommy, 1423	<ul style="list-style-type: none"> <li>-Regular maintenance of concrete trellising throughout</li> <li>-Regular maintenance of trenching</li> </ul>
<b>Campground</b>	<b>Recommendation(s)</b>
Fox Creek CG	<ul style="list-style-type: none"> <li>-Regular maintenance</li> </ul>
Lake Creek CG	<ul style="list-style-type: none"> <li>-Remove old restroom</li> <li>-Replace wood picnic tables</li> <li>-Thin dense vegetation throughout (especially sites 12-16)</li> </ul>
Silver Falls CG	<ul style="list-style-type: none"> <li>-Replace wood picnic tables</li> <li>-Install standard grills where missing</li> <li>-Revamp tent pads</li> <li>-Add signage for picnic area</li> <li>-Restore CCC shelter at group site</li> </ul>

### 3.2.4 Future Opportunities

- Add Silver Falls campground to the online reservation system.
- Incorporate a new overnight yurt rental with nearby access to front-country trails (Silver Falls and Tommy Creek Falls).
- “New” front-country trail: Add additional signs at South Tommy trailhead for “Tommy Creek Falls” trail. This would be an out and back trail from the South Tommy TH across the Entiat River to its terminus at the Tommy Creek bridge. Easily accessed from Entiat River Road, flat, and includes two water features (Figure 3.2).



*Figure 3.2 Tommy Creek falls as seen from current South Tommy Trail. (Credit:Galambos)*

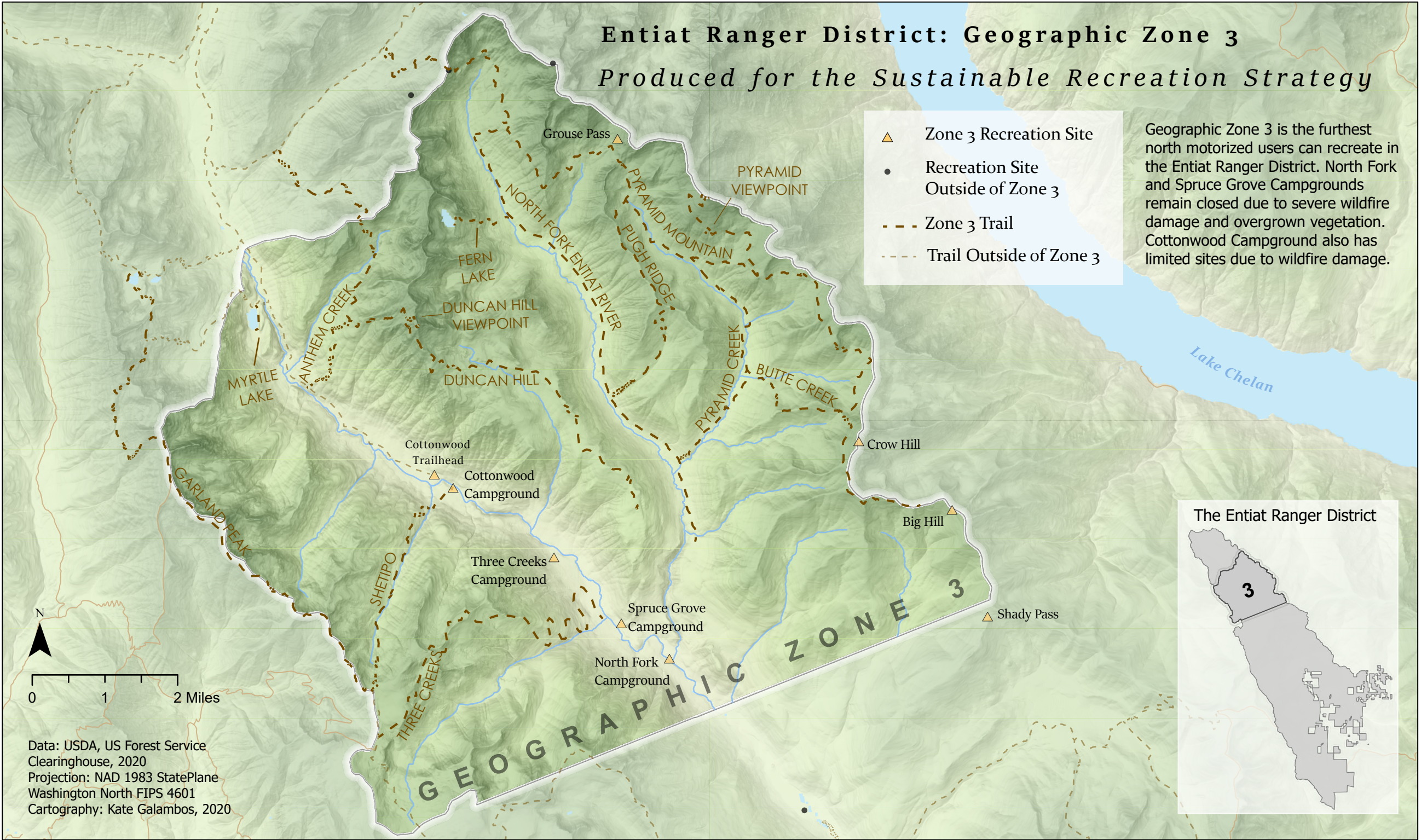


# Entiat Ranger District: Geographic Zone 3

*Produced for the Sustainable Recreation Strategy*

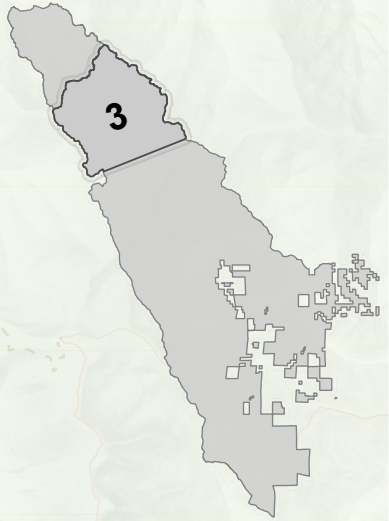
- ▲ Zone 3 Recreation Site
- Recreation Site Outside of Zone 3
- - - Zone 3 Trail
- - - Trail Outside of Zone 3

Geographic Zone 3 is the furthest north motorized users can recreate in the Entiat Ranger District. North Fork and Spruce Grove Campgrounds remain closed due to severe wildfire damage and overgrown vegetation. Cottonwood Campground also has limited sites due to wildfire damage.



Data: USDA, US Forest Service  
Clearinghouse, 2020  
Projection: NAD 1983 StatePlane  
Washington North FIPS 4601  
Cartography: Kate Galambos, 2020

The Entiat Ranger District





### 3.3 Geographic Zone 3: Upper Valley

- Landscape: Dense temperate-boreal forests/woodland.
- Total Trail Miles Evaluated: 47.3
- Trail Types Available: Motorized, Non-Motorized, Hiker Only
- Most Popular Activity: OHV

Table 3.9 lists the trails in the Upper Valley and their scores, Table 3.10 describes the campgrounds. Site-specific recommendations for trails and campgrounds are provided in Table 3.11.

#### 3.3.1 Zone 3: Trails

*Table 3.9 Scores for Trails in the Upper Valley (Zone 3)*

Name, #	Class	Current Condition	User Popularity	Trail Score
Anthem Creek, 1435	3	11	3	33
Duncan Hill, 1434	3	9	4	35
Myrtle Lake, 1404A	3	10	4	40
North Fork Entiat River, 1437	3	9	4	36
Pyramid Mountain, 1433	3	11	4	44
Shetipo, 1429	3	12	4	48

All Upper Valley trails are highly popular, with User Popularity scores of 3 or 4. As a result, maintenance and improvements on these trails should primarily be driven by the Current Condition score, available partners — and their skills — and the type of trail improvements/maintenance necessary. For example, the North Fork Entiat River is an appropriate trail for volunteer maintenance because the major issues are potential hazards (i.e. snags) and obstacles (downed trees). These issues can be solved by volunteers with chainsaw training and equipment. Alternatively, Duncan Hill has a similar Trail Score, but has major tread issues that require a more experienced crew to solve.

### 3.3.2 Zone 3: Campgrounds

Table 3.10 Campground Findings in the Upper Valley (Zone 3)

Name	Sites	Restrooms	Picnic Table	Fire Ring	Hazards/Major Issues
Cottonwood	-26 listed -23 visible -9 in usable condition	3- fair condition	8 all wood tables still present. All need replacing.	-13 standard grills - poor condition -1 CCC stove	-Potential flood/erosion hazard for sites along the Entiat River -Lack of shade cover for non-river bank sites -Potential snags from burn
North Fork	-8 listed	2-fair condition	1	2	-Number of sites are close to the river. Potentially harming riparian habitat.
Spruce Grove	-2 listed	1- poor condition	2	2	-Largely overgrown
Three Creek -	3	1	1 wood table	2 fire rings	-A few hazard trees in need of removal

Table 3.11 outlines specific recommendations for Zone 3 trails and campgrounds. Additional information on each trail and campground is also available in the Entiat Facilities Report.

### 3.3.3 Zone 3: Site-Specific Recommendations

Table 3.11 Recommendations for Trails & Campgrounds in the Upper Valley (Zone 3)

Trail Name, #	Recommendation
Anthem Creek, 1435	-Add signage at Entiat River Trailhead, Duncan Hill TH, junction with Entiat River trail and Duncan Hill trail -Repair major tread issues throughout (erosion and trenching) -Regular log out throughout
Duncan Hill, 1434	-Add signage at TH for junctions with Anthem Creek, Duncan Hill VP, Entiat River Trail -Construct crossing for Snow Brushy (potentially Anthem Creek) to create loop -Repair major erosion and trenching (~mile 6-8)
Myrtle Lake, 1404A	-Improve trail to north-side backcountry camp to repair erosion -Construct foot-bridge/boardwalk across marsh on north-side trail to backcountry camp -Clear snag-hazards in south-side backcountry camp area OR officially close to overnight use due to hazard -Install backcountry toilet -Install informative signs about backcountry camping and safety (wildlife, proper

	waste disposal, etc.)
North Fork Entiat River, 1437	<ul style="list-style-type: none"> <li>-Early season, regular logout (especially for ~mile 1-5)</li> <li>-Replace crossing at ~mile 1 across South Pyramid Creek</li> <li>-Construct crossings for Grouse Creek and North Fork Entiat River at the junction with Fern Lake</li> <li>-Maintain or remove backcountry toilet at Deer Camp (junction with Fern Lake)</li> </ul>
Pyramid Mountain, 1433	<ul style="list-style-type: none"> <li>-Construct bridge across Emerald Park to create loop</li> <li>-Replace/add sign for Butte Creek trail</li> <li>-Recut trail at ~mile 8-9 to eliminate fall-line-slope and erosion</li> </ul>
Shetipo, 1429	<ul style="list-style-type: none"> <li>-Construct bridge at first crossing of Shetipo Creek</li> <li>-Add trail sign in day-use parking area before Cottonwood Campground</li> <li>-Repair major trenching (~mile 4)</li> <li>-Regular logout in burned area (~mile 1-3)</li> </ul>
<b>Campground</b>	<b>Recommendation(s)</b>
Cottonwood	-Reconstruct the damaged sites to meet modern needs and accessibility
North Fork	<ul style="list-style-type: none"> <li>-Convert part of original sites to group site and close the other half to restore natural habitat</li> <li>-Build RV and tent pads</li> <li>-Build group campfire area, shelter, temporary shade structures</li> <li>-Construct one access to the river and restore the riparian area in the rest</li> </ul>
Spruce Grove	<ul style="list-style-type: none"> <li>-Convert to day use</li> <li>-Remove toilet, fee tube and large sign board</li> <li>-Install day-use sign</li> </ul>
Three Creek	<ul style="list-style-type: none"> <li>-Convert to group site</li> <li>-Expand tent camping as part of group site past the site of the current bathroom</li> <li>-Install CXT or new bathroom with tank</li> <li>-Utilize the original plans for the site expansion</li> </ul>

### 3.3.4 Zone 3: Future Opportunities

- Establish backcountry campground at south-end of Myrtle Lake
  - Clear hazardous snags
  - Install informative signs on backcountry camping
  - Install backcountry toilet
- Create new trail from south-end of Cottonwood campground through burned area
  - ADA accessible trail for campground users
  - Include interpretive signs explaining the impact of fire on the district and tribal history
- Consider limiting motorized use of Shetipo trail to seasonal use to improve tread and decrease washout issues.

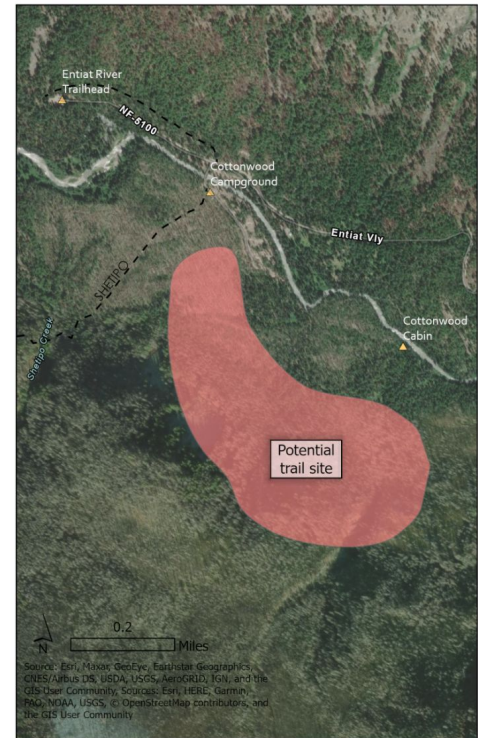
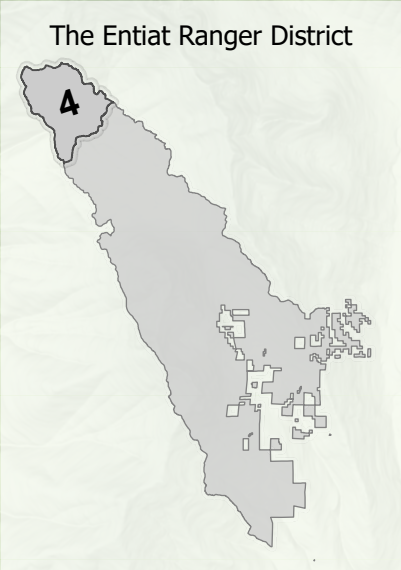
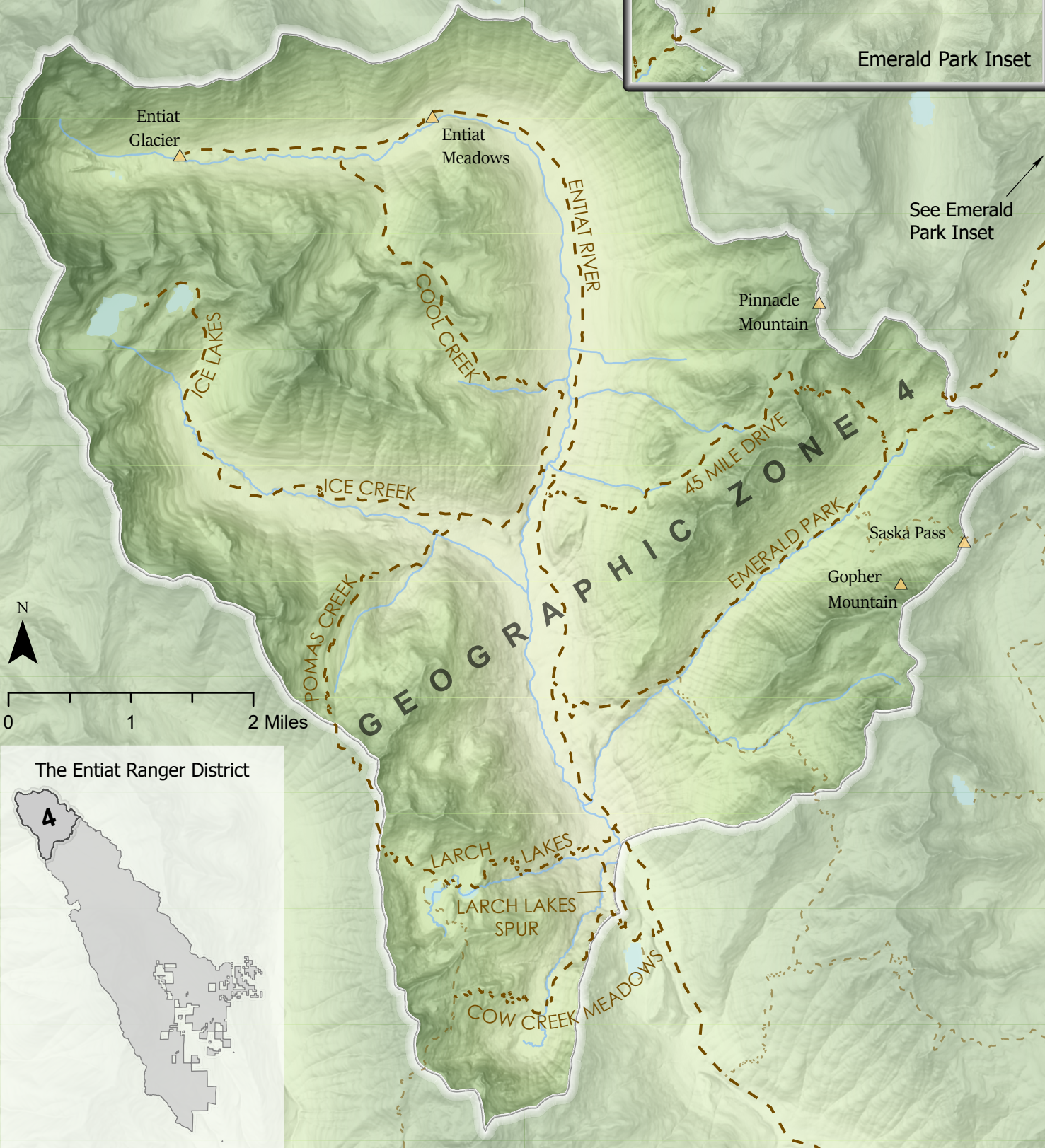
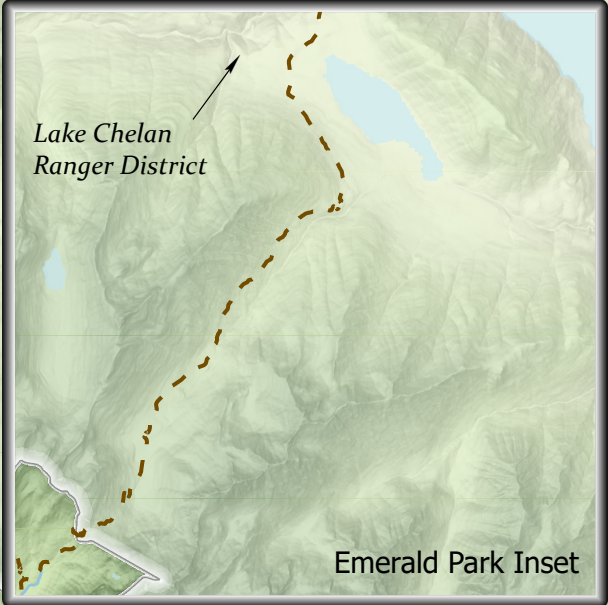


Figure 3.3 Potential new trail near Cottonwood Campground. (Credit: Galambos)



# Entiat Ranger District: Geographic Zone 4

*Produced for the Sustainable  
Recreation Strategy*



Geographic Zone 4 encompasses all of the Entiat Ranger District that falls within Glacier Peak Wilderness Area. These trails are therefore non-motorized. These wilderness trails provide access to alpine lakes, meadows, and even the Entiat Glacier. Trails in this zone also provide access to recreation in the Chelan and Wenatchee River Ranger Districts.

Data: USDA, US Forest Service  
Clearinghouse, 2020  
Projection: NAD 1983 StatePlane  
Washington North FIPS 4601  
Cartography: Kate Galambos, 2020

- ▲ Zone 4 Recreation Site
- Recreation Site Outside of Zone 4
- Zone 4 Trail
- ... Trail Outside of Zone 4



### 3.4 Geographic Zone 4: Upper Valley, Wilderness

- Landscape: Rugged, temperate-boreal forests/woodland with glacier-covered peaks and alpine lakes.
- Total Trail Miles Evaluated: 33.4
- Trail Types Available: Motorized, Non-Motorized
- Most Popular Activity: Backcountry camping

Table 3.12 lists the trails in the Upper Valley, Wilderness and their scores. Site-specific recommendations for trails and campgrounds are provided in Table 3.13.

#### 3.4.1 Zone 4: Trails

*Table 3.12 Scores for Trails in the Upper Valley, Wilderness (Zone 4)*

Name, #	Class	Current Condition	User Popularity	Trail Score
Cow Creek Meadows, 1404	3	13	3	39
Emerald Park, 1230	3	10	3	30
Entiat River, 1400	3	9	4	36
Ice Creek, 1405	3	5	3	15
Larch Lakes, 1430	3	13	4	52

The wilderness area within the district provides backcountry users with remote opportunities. As such these trails are all quite popular among backcountry campers, mountaineers, and hikers. Managers should prioritize Larch Lakes in this zone. Not only does this trail have the highest Trail Score, but it is one of the most accessible within the wilderness area and therefore has high potential of serving many users. Cow Creek Meadows should be considered a top priority as well as it is a connector trail for Garland Peak and Larch Lakes from the south. Additionally, the Cow Creek Meadows are a destination within themselves and again provide a closer, backcountry destination.

Table 3.13 outlines specific recommendations for Zone 4 trails. Additional information on each trail is also available in the Entiat Facilities Report.

### 3.4.2 Zone 4: Site-Specific Recommendations

Table 3.13 Recommendations for Trails in the Upper Valley, Wilderness (Zone 4)

Trail Name, #	Recommendations
Cow Creek Meadows, 1404	<ul style="list-style-type: none"> <li>-Repair extreme trenching (~mile 1- just above meadow)</li> <li>-Regular logouts (~mile 0-5)</li> <li>-Create clearer trail junction on north side of Myrtle Lake (<i>see Myrtle Lake recommendations</i>)</li> <li>-Build small footbridge at Cow Creek crossing</li> </ul>
Emerald Park, 1230	<ul style="list-style-type: none"> <li>-Add trail junction sign on Entiat River trail indicating junctions with Duncan Hill, Pyramid Mountain, and Milham Pass</li> <li>-Clear extreme vegetation overgrowth - primarily Aspens (~mile 3-4)</li> <li>-Reestablish clear trail after mile 4</li> </ul>
Entiat River, 1400	<ul style="list-style-type: none"> <li>-Regular vegetation clearing (~mile 0-4)</li> <li>-Build crossing at Snow Brushy Creek</li> <li>-Reestablish clear trail (~mile 10-11)</li> <li>-Regular logouts at least to junction with Ice Creek trail</li> <li>-Add distance to Entiat River trail terminus to all trail junction signs throughout trail (i.e. Anthem, Emerald Park, etc.)</li> </ul>
Ice Creek, 1405	<ul style="list-style-type: none"> <li>-Build crossing or indicate “footpath” with sign to aid users in crossing the Entiat River (there is already such a sign for stock ford)</li> <li>-Reestablish clear trail (~mile 2-3)</li> <li>-Build small footbridges for Ice Creek crossings (2)</li> </ul>
Larch Lakes, 1430	<ul style="list-style-type: none"> <li>-Clearly mark Larch Lakes Spur trail access from Cow Creek/Myrtle Lake junction with the Entiat River Trail</li> <li>-Build crossing for Entiat River to access north-end of trail</li> <li>-Clear extreme vegetation overgrowth (~mile 3- Entiat River Crossing)</li> </ul>

### 3.4.3 Zone 4: Future Opportunities

- Support backcountry camping opportunities:
  - Mark informal backcountry campsite off of Ice Creek trail just across the Entiat River.
  - Reestablish backcountry horse camp on Entiat River Trail just before Cool Creek junction.
- Mitigate tread and dust issues on Entiat River Trail by closing the entire trail to motorized users.

The final section of this report outlines district-wide recommendations that reflect broader actions that ERD can take to implement sustainable recreation goals throughout the district.



## 4. District-wide Recommendations

The final section of the Entiat Sustainable Recreation Strategy outlines recommendations, which reflect public input, that are relevant throughout the district, as opposed to site-specific recommendations included in Section 3 for trails and campgrounds. These district-wide recommendations are organized by three main categories: Management, Communication and Volunteers/Partnerships. These categories were identified in the social data findings as key themes that reflect public sentiment regarding how the ERD can best provide and maintain sustainable recreation opportunities into the future. Within these three categories, the recommendations are broken down into short and long term actions and specify the sustainable recreation strategy goals, listed below, that they address.

**Goal 1:** Provide recreation opportunities that are accessible to current and future visitors

**Goal 2:** Create a resilient natural, cultural and scenic environment that supports recreation for future generations

**Goal 3:** Partner with public and private groups to ensure safe and quality recreation opportunities that consider changing visitor interests.

**Goal 4:** Implement shared stewardship to ensure sustainable decisions, sound investments, and accountability in all recreation planning

**Goal 5:** Communicate with the public and partners effectively to support long-term relationships and decision making

### 4.1 Management

The management category reflects actions the ERD should take to address maintenance and planning practices. The short and long term management actions are outlined in Table 4.1.

*Table 4.1. Short and Long Term Management Actions*

Short Term Action	Goal(s)
Replace trail signs where current signs are missing or unclear with signs that include mileage and Spanish translation	1
Implement trail maintenance plan that prioritizes trails of high public interest and low infrastructure-improvement needs ( <i>see Section 3: Recreation Infrastructure Priorities</i> )	1,2
Develop protocol to share with all contractors that outlines minimum sustainability practices/principles for infrastructure improvements or replacements	2
Long Term Actions	Goal(s)
Complete Winter Travel Management Plan on District level	2,4
Complete Travel Management Plan on District level	2,4
Identify locations for front-country trails based on environmental suitability	2,3

Decommission trails of low-public interest and high infrastructure-improvement needs (see <i>Section 3: Recreation Infrastructure</i> )	2
Investigate new revenue generation opportunities (e.g., fire lookout and yurt rentals)	1

## 4.2 Communication

The communication category reflects actions the ERD should take to enhance their communication and outreach with the general public, organized recreation groups, and stakeholders. The short and long term communication actions are outlined in Table 4.2.

*Table 4.2. Short and Long Term Communication Actions*

<b>Short Term Actions</b>	<b>Goal(s)</b>
Communicate the results of the Entiat Sustainable Recreation Strategy	5
Add periodic updates to the Story Map	5
Engage with multicultural partner groups such as Team Naturaleza and Latino Outdoors Washington	3
<b>Long Term Actions</b>	<b>Goal(s)</b>
Create an online dashboard for trail maintenance updates and post on Story Map	5
Distribute quarterly District newsletter to inform the public of current issues, needs, and events in the ERD	5
Develop Communication Plan on District level	5
Enhance Forest Service presence/education efforts	3,5

## 4.3. Volunteering/Partnerships

The volunteering/partnerships category reflects opportunities for the ERD to leverage limited staff capacity and budget allocations through individual volunteers, partnerships, and shared stewardship agreements with other agencies. The short and long term volunteer/partnership actions are outlined in Table 4.3.

*Table 4.3 Short and Long Term Volunteer/Partnership Actions*

<b>Short Term Actions</b>	<b>Goal(s)</b>
Formalize volunteer agreements	3
Conduct annual volunteer chainsaw training	3
Compile tools for trail maintenance in lending “toolshed” to support volunteer work	3
Identify annual trail projects appropriate for volunteer groups	3
<b>Long Term Actions</b>	<b>Goal(s)</b>
Establish volunteer/partnership coordinator position	2/3
Formalize shared stewardship agreements with other land managers in District	4
Broaden volunteer base to include groups beyond recreation interests	3

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## Appendices

Each of the following appendices includes a detailed description of data collection methods along with any materials developed for that particular method.

Appendix A Interview Methods

Appendix B Online Story Map

Appendix C Field Conditions Reports

Appendix D Open House Methods

Appendix E Online Survey Methods

Appendix F Online Survey Instrument

Appendix G Trail Ranking Methods

Appendix H All Sites Mentioned in Social Data

## Appendix A: Interview Methods<sup>9</sup>

### Initial Contact

A total of 25 interviews were completed by the researchers (Professor Laninga, graduate assistant Kate Galambos) with stakeholders identified primarily by the Forest Service recreation planner, Jon Meier. These stakeholders represented environmental nonprofits, local government agencies, recreation interest groups, local business owners, as well as retired Forest Service staff who still reside locally. In addition to the list provided by Meier, participants were asked at the end of the interview if there were other people they recommended the researchers contact. If these were new contacts, not included on the Forest Service stakeholder list, the researchers contacted them.

Contact with stakeholders was initiated with an email or phone call to arrange a time to participate in the interview. Each stakeholder was contacted at least twice before the researcher stopped attempting to reach them. If no email was available, stakeholders were contacted twice by phone before the researcher considered the contact failed. If email was the only available contact information, the same method was applied but instead with email communication. Therefore, the general rule was to consider the stakeholder uninterested in participating in the interview after two failed attempts at contacts. A total of 39 people/organizations were contacted to participate in the interviews. Fourteen stakeholders were uninterested in participating in an interview.

### Interview Process

Interviews typically lasted between 20 and 60 minutes depending on the length of participants' responses and their questions regarding the project. Most interviews were over-the-phone with just a few in person during the summer of 2019. Before the interview began, consent was established by the researcher by confirming that the participant understood the provided consent form. Once consent was established, the research asked to record the interview for the purpose of their own note taking and accuracy. Every interview participant agreed to being recorded.

Once the recording began, the researcher gave a brief overview of the entire research project and the importance of the interviews toward the next stage of research. Any questions the interview had were addressed. For some interviews, this initial part of the interview took up to ten minutes. Some participants were already informed regarding the project from online sources or community word-of-mouth and therefore had fewer questions.

Then the participants were asked 13 questions. In some cases, it did not make sense to ask the questions in the order that they were written. As these interviews were conducted to establish context and get general information about the recreation in the district, it was not essential that

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<sup>9</sup> All social data collection methods were reviewed and approved by WWU's Institutional Review Board; this research is approved under EX19-094.



each question be asked exactly as the instrument was written. Instead, a more conversational tone was established between the researcher and participants and the questions were used as a guide. However, in order to stay consistent, each participant was asked all questions, even if the conversation had already uncovered some answers.

The interview concluded with the researcher asking “Who else do you think would be interested in this planning process?” In the majority of interviews, participants had at least one additional name to offer, if not three or four. This technique, termed snowball sampling, was used to obtain more stakeholders until interview responses reached saturation. Saturation is when no new information is being received.

### **Interview Data Processing**

The researcher, or research assistant,<sup>10</sup> used transcription software<sup>11</sup> to transcribe the recording. The purpose of transcription was mostly for the purpose of accurate note-taking and future reference.

In addition to the exact transcription, the researcher wrote a summary paragraph after each interview to derive the major topics covered. The summary paragraphs were added to a spreadsheet and color-coded to indicate the repetitive comments or topics between interviews. The researcher also coded unique topics and interesting quotes. The purpose of this color-coding scheme was to establish a system for identifying when interview results reached saturation. Summary paragraphs were reviewed after a new interview to update colors. For example, if one participant made unique remarks those would be coded blue. However, if a following participant made the same, or very similar remarks, the first participant’s remarks along with the second’s were coded orange. Orange indicated that a remark had been made by more than one participant. Saturation then was symbolized by most summaries being coded orange, thus indicating that no new knowledge was appearing in interviews.

The researcher also took note of very specific comments relating to facilities. Comments regarding specific routes or trails were noted in a different spreadsheet to be included in future stages of the research. Since these specific comments were not representative of general themes, they were not color-coded with the system described above.

In addition to identifying saturation of interview results, the color-coding system allowed the researchers to identify recurring themes to use in the next phase of research. Themes that appeared in multiple interviews were noted in an “emerging themes” spreadsheet - both affirming and opposing comments related to each theme were identified. Table A1 provides an example of themes with affirming and opposing responses. These themes informed the activities developed for the public meetings.<sup>12</sup>

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<sup>10</sup> Research assistants were hired over the summer of 2019 and supported interview analysis.

<sup>11</sup> Temi transcription software was used for this research.

<sup>12</sup> Reference appendix B for the list of themes used for the community meeting activity.

*Table A1.1. Emerging Themes from Stakeholder Interviews*

Emerging Theme	Affirming Theme 1	Affirming Theme 2	Affirming Theme 3	Opposing Theme 1	Opposing Theme 2
ERD is hidden gem among more popular recreation areas	Less visited than nearby rec areas like Leavenworth and Chelan	ERD is a "well-kept secret"	"We joke that if you're not from here, you need a guide to use the Entiat trails."	Need more advertising for the district to bring tourism dollars to greater region	Need more people to visit Entiat to remove pressure from neighbor regions like The Enchantments
Community desire to keep all trails maintained and open	More trails means less concentrated use (damage) to each	Keep roads open and maintained as well	Trails and campgrounds represent a taxpayer investment therefore they should be accessible to taxpayers	Open to closing areas for the purpose of restoration	

## Interview Correspondence

SUBJECT LINE: Sustainable Rec Strategy for the Entiat Ranger District research request

Greetings,

The Forest Service seeks your input on a new recreation strategy for the Entiat Ranger District. This strategy, formally named the Post-Fire Sustainable Recreation Strategy for the Entiat Ranger District, will outline community goals and recommend strategies for implementation that address social, economic and environmental sustainability. The Entiat Ranger District unit of the Okanogan-Wenatchee National Forest has identified you as someone with valuable insight into the priorities of your community.

This research will inform managers for future decision making regarding recreation priorities, however it will not be a formal planning document. In a time of limited resources and ecological change, the Forest Service looks to the public to better understand the recreation needs and opportunities from the people who love this place. With growing regularity of wildfires in this region, Forest Service recreation managers want to know what matters most to those who use, or could in the future use, the Entiat Ranger District.

The first stage of the project will include interviews with stakeholders. If you volunteer to participate, your input will guide the next stage of project research. Your insights will offer essential initial knowledge for the process.

Thank you in advance for your consideration, your insights and opinions are truly valuable to this research. Interviews will last no more than one hour and can be scheduled at your convenience. To schedule an interview time, please respond to this email address or contact Kate Galambos at (425) 283-9211.

For more information on the project visit:

<https://www.fs.usda.gov/detail/okawen/news-events/?cid=FSEPRD637031>

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## **Consent to Participate Form**

### Consent to Participate in Research *Entiat Sustainable Recreation Plan, Western Washington University*

*We are asking you to be in a research study. Participation is voluntary. The purpose of this form is to give you the information you will need to help you decide whether to participate. Please read the form carefully. You may ask questions about anything that is not clear. When we have answered all of your questions, you can decide if you want to be in the study or not. This process is called “informed consent.”*

**Research Purpose:** You are being invited to participate as a “key informant” in this research. Key informants offer initial insights into the priorities of interest groups in the greater Entiat Ranger District region. The results of these informal interviews will inform the next phase of research — online surveys — with general context and background.

**Procedure:** If you choose to participate in this study, you will be asked a number of questions related to your experience with the Entiat Ranger District as part of an interview lasting no more than one hour. Additionally, you will be asked to identify other community members you think would be interested in this study, if possible.

**Recording:** If you choose to participate in this study, you will be asked for your consent for your answers to be digitally recorded. The recording will be in the form of audio, not video recording. The purpose of recording the interview is to ensure data accuracy and create a source for the researchers’ reference. Your consent to record is NOT required to participate, however, it is the preferred method of the researcher.

**Participation and Withdrawal:** Your participation is voluntary; you can choose whether or not to participate. Furthermore, if you do participate, you may withdraw at any time. You may also refuse to answer any questions you do not want to answer. There is no penalty if you withdraw from the study.

Researchers:

- Kate Galambos, Research Assistant : [kgkgalambos@gmail.com](mailto:kgkgalambos@gmail.com)
  - Tammi Laninga, Primary Researcher : [Tammi.Laninga@wwu.edu](mailto:Tammi.Laninga@wwu.edu)
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## Interview Questions

### Connection to ERD

1. How are you (or the group they represent) involved with the ERD?
2. Why is the ERD valuable to you/your organization?
3. What makes the ERD valuable to the region?

### Major Recreation Opportunities

4. What do you see as the main recreation opportunities in the Entiat Ranger District (ERD)? Have these changed as a result of fires?
5. What improvements could be made to existing recreation opportunities. What factors are impacting access to or use of these recreation opportunities? What new recreation opportunities would you like to see in the ERD?
6. In an ideal future, what recreation is available in the ERD?
7. What does your organization see as the biggest challenge to achieving that future?

### Advice for Managers

8. How can recreation managers achieve that future?
  - a. Would you/your group be interested/willing to partner with the ERD to get there?
9. What do you think should be managers priorities for the ERD?
10. What challenges do you think managers face when planning for recreation in the ERD?

### Further Communication

11. Who else do you think would be interested in this planning process?
12. When we release an online survey in the fall, can we send it to your organization's members?
13. Do you have a preferred method for contact/communication from us? The ERD?

## Appendix B: Online Story Map

### Phase I

The online story map was initially published in the spring of 2019 concurrently with the USFS press release as a communication method for public engagement (Figure B1). A story map is an online presentation tool that incorporates text, maps, and images to bring readers through a narrative. The Entiat story map was developed by Jamie Cannon, GIS specialist, from the Region 6 Forest Service. The initial story map included narrative text explaining the history of recreation in the Entiat Ranger District and how limited resources, increased fire frequency, and increased visitation requires new planning methods.

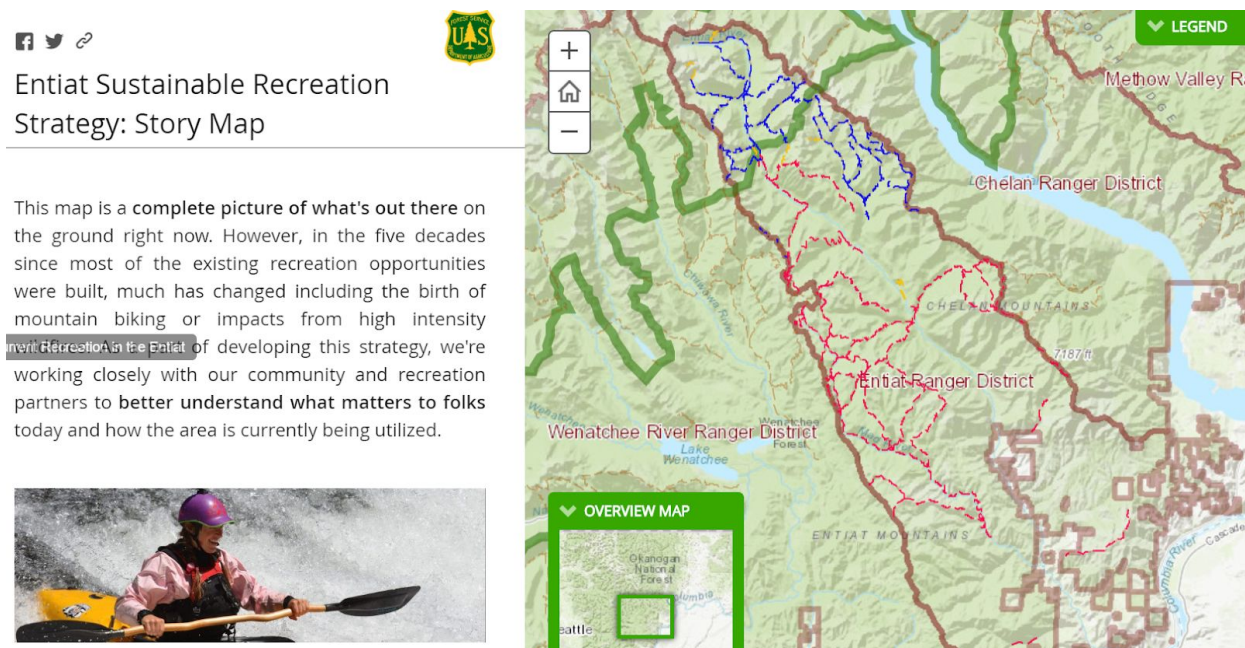


Figure B1. Screenshot of Story Map

During Phase I, the purpose of the story map was to provide members of the public with information about the Entiat Ranger District and the purpose for the Entiat Sustainable Recreation Strategy. In addition, the story map housed a link to a Qualtrics<sup>13</sup> survey to collect contact information from interested community members. People who visited the story map were not required, only prompted, to fill out the contact form. Contact information from the story map was used to send invitations for the online survey. The contact form was open from June to October 2019.

<sup>13</sup> Qualtrics is the online survey software Western Washington University uses for all survey research.

## Phase II

The purpose of Phase II was to collect specific data on recreation use on the Entiat Ranger District. The second phase included an additional page of the story map that allowed participants to drop points on the online map that identified trails and sites in the ERD and answer three questions with each corresponding point (Figure B2). The submissions were reviewed by the researchers before they were made public to be sure they were appropriate. Once approved, the comments appeared publicly, but anonymously, to give future participants an idea of what concerned others. The questions mimicked a question from the survey,<sup>14</sup> which was also the basis of activity 1 for the Open Houses. By asking the same questions with three different collection methods, the researchers aimed to reach a wide audience.

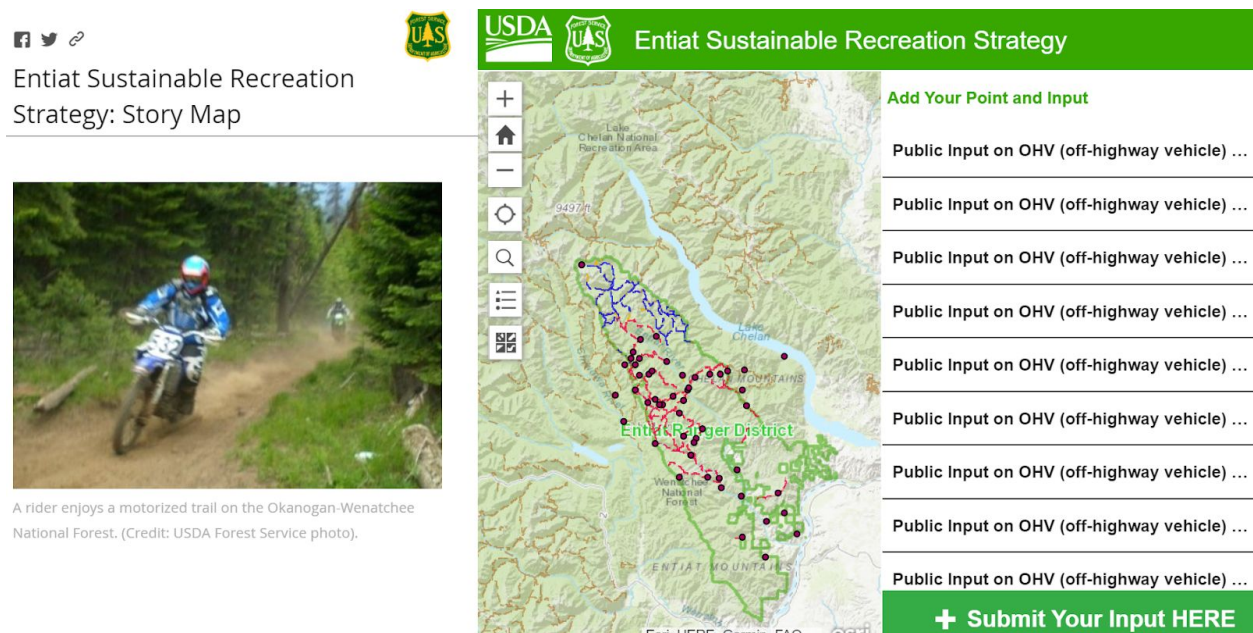


Figure B2. Screenshot of Interactive Map in the Story Map

The interactive feature on the story map was open for public input from October 5 to November 30, 2019. The storymap opened the same day at the first open house and closed on the same day as the online survey.

<sup>14</sup> See appendix E for a complete list of survey questions.



## Appendix C: Field Conditions Reports


To determine current physical conditions on the ground, the researchers spent about seven weeks in the Entiat Ranger District collecting data regarding recreation facilities. Trails and campgrounds were evaluated with two separate criteria to identify damage, obstacles, and general conditions. The trail data was collected using tablets with ArcGIS spatial software and campground data was recorded on paper and later digitized.

### Trail Evaluation

Before beginning data collection, the researchers determined criteria for evaluating trails. The criteria were determined based on expected features, and historic and institutional knowledge from the Forest Service staff. Initial evaluations were conducted based on 17 possible features each with an index for details such as severity, size/length, or type (or a combination). Some features had criteria specific to that particular feature. For example, a feature of an unimproved crossing required details for length and availability of alternative routes.

Definitions for each feature were determined and logged as part of the Trail Evaluation Guide (Table C1).<sup>15</sup> The guide was used as a reference throughout the field data collections on trail. By using a clear guide, researchers were able to collect data consistently.

*Table C1. Excerpt from Trail Evaluation Guide*

<b>Trail Features</b>	<b>Example</b>	<b>Abbreviation</b>
Unimproved crossing: Water crossing on trail or an area that looks like it is covered in water during another season. *Determine the severity of the need for an improved crossing by measuring the length. Make note of the possibility for an alternative route rather an improved crossing*		UC

The features outlined in the guide informed development of the ArcGIS attribute database. The database included each possible feature with every attribute possible. The database was then used to create the field survey tool through the programs, Survey123 and Collector, which allowed the researchers to assign attributes to lat/long points while on trail (Table C2).

<sup>15</sup> The complete Trail Evaluation Guide is available in the Summer 2019 Facilities Evaluations and Survey Intercept Guide.

*Table C2. Example of the database attributes for trail evaluations using the Survey 123 program*

Length	Definition			
Short	Less than 3 ft			
Medium	3-6ft			
Long	More than 6 ft			
Alternative Route	Definition			
No	No possible route around the crossing to continue safely on trail.			
Yes	Available, safe route around the crossing to continue safely on trail.			
Stream Bank Damage Occuring				
No	No physical evidence of long term damage to bank or water quality			
Yes	Med/High evidence of bank erosion and water quality impacts			

The initial field survey included 17 possible features. However, after the first two days in the field, the researchers found that new features and more attributes needed to be included. After adjustments and additions, the final field survey included 21 features, each with multiple attribute options. The field survey also included the trail number and type, date, and an option to include photos, if helpful but not necessary.

Due to time and resource constraints, the researchers had to limit the trail evaluations to those of highest priority to the ERD. The district recreation planner ranked all 57 trails into categories of importance based on historic use, maintenance, and fire. The trails of the highest priority for field surveys were mostly those that had not had regular maintenance in the last few years and/or had been recently burned and/or were historically popular among recreators. Following these criteria, nine trails were high priority, 15 medium, 24 low, and the remaining nine were named as “non-priority” (Figure C1). These criteria guided the researchers field survey schedule. High priority trails were evaluated first, medium next, and then low. In teams of 2-4, researchers hiked for more than 300 hours over the summers of 2019 and 2020. Many of the trails were in poor to even unsafe condition and required detailed evaluations. This on-the-ground field work informed conversations with stakeholders, FS employees, and the general public. The researchers completed field surveys on all the high priority trails, all but two of the medium priority trails, and completed two of the low priority trails, for a total of 24 trails.<sup>16</sup> For the most part, field evaluations covered the entire length of each trail. However, a handful of high and medium priority trails were only partially evaluated.

<sup>16</sup> A complete list of evaluated trails ranked based on priority are available in the Entiat Facilities Report.

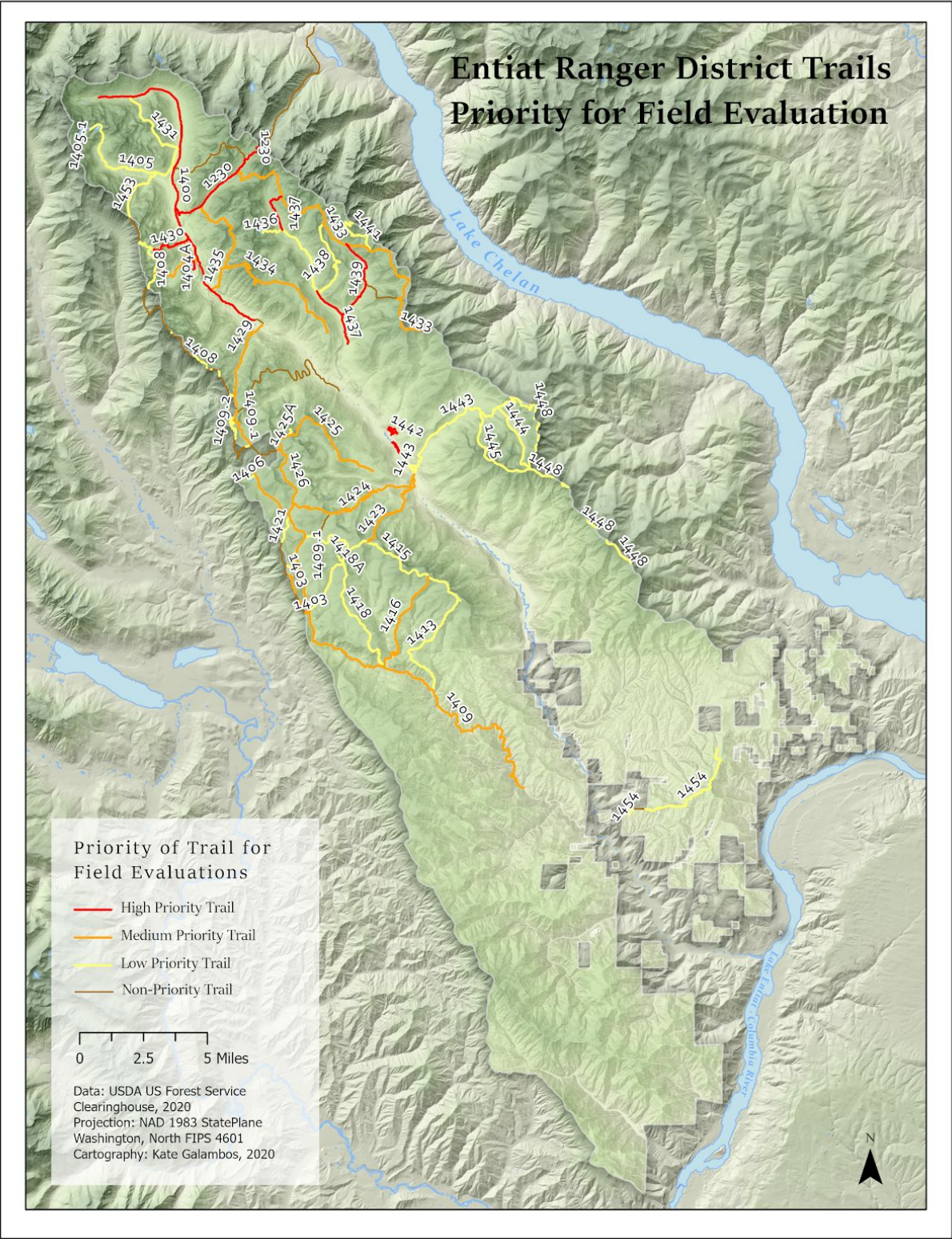


Figure C1. Trail Priority Map for Condition Assessments



To accompany the data collected in the Survey123 and Collector programs, a trail summary sheet<sup>17</sup> was completed for each trail (Figure C2). Evaluation sheets provided basic information about the trail on a mile-by-mile basis. The purpose of the summary sheets were to have conditions data from a more general perspective, rather than the point data collected from GIS programs. Trail summaries allowed the researchers to quickly report the condition of a trail.

### Trail Summary Sheet

Trail Name: North Tommy \_\_\_\_\_ Start Date: 6/25/19

Trail Type: Multi-use \_\_\_\_\_ Date Completed: 7/27/2019

Difficulty Rating (scale of 1-5): 3 \_\_\_\_\_ Team Members Present: Tammi and Erin, Riley \_\_\_\_\_

Way Point (lat/long): N 47 deg 56'18.6" W 120 deg 32'50.6" End Point (lat/long): N 47 deg 57' 4.1" W 120 deg 37' 55.0"

Mile #	Description
1	Gradual incline. "Bike moguls"/pot holes in trail Low-moderate trenching Improvements with waffle shaped cinder blocking 2nd growth forest with low severity burn areas
2	Moderate incline Medium severity burn area Moderate trenching Mostly exposed trail

Figure C2. Screenshot for a Trail Summary Sheet for North Tommy trail (1425)

### Campground Evaluations

Campground evaluations<sup>18</sup> did not use the Survey123 or Collector programs for recording. As the campgrounds each already had pre-defined features (picnic tables, bathrooms, etc.), it was unnecessary to create an original database of features similar to what was developed for trail evaluations. Instead, the researchers took note of conditions of specific facilities at each campground and individual sites using a campground evaluation sheet (Figure C3).

Researchers walked each campground and identified and noted the condition of facilities at each site. In addition to built infrastructure, researchers made note of potential hazards and other, relevant visible features.

<sup>17</sup> All completed trail summaries can be found in the Entiat Facilities Report.

<sup>18</sup> All completed campground evaluations can be found in Entiat Facilities Report.

## Campground Evaluation Sheet

Campground Name: Pine FlatsNumber of Sites: 6Fee Type: \$8/nightAccess Road: Mad RiverStart Date: 7/2/19Date Completed: 7/2/19Team Members Present: Kate and ErinEntrance Lat/Long: N\_47 deg. 45'31.1" W 120 deg. 25'30.4"

Site #	Picnic Table Condition	Grill/Fire Pit	Visual Analysis	Potential Hazards	Parking Area	Parking Barriers
1 Med.	Metal legs	Standard- needs new grill	No tent pad  Near Trailhead  User trails to tent areas and water	N/A	Pull-in	Rocks

Figure C3. Screenshot from Campground Evaluation Sheet for Pine Flats Campground

Both the trail and campground evaluations gave an abundance of data for planning based on current conditions. Beyond the scope of this research, these reports provide a resource for land managers in the future to establish a baseline of available recreation facilities and their condition in the Entiat Ranger District.

## Appendix D: Open House Methods

### Fall 2019, Entiat & Wenatchee

Oct 5, 3-5 PM, Entiat Fire Station Community Room

Oct 7, 5:30-7:30 PM, Chelan County Fire Station

The first open house was hosted in Entiat on Saturday, October 5, 2019, at the Entiat Fire Station Community Room. A second meeting was held in Wenatchee the following Monday, October 7, at the Chelan County Fire Station. The purpose of hosting two meetings was to capture more community members who might have schedule restrictions due to where they live or work. About 25 people attended the Entiat meeting and about 10 attended the Wenatchee meeting.

The goal of both meetings was to collect insights and perspectives from attendees. In addition, the researchers wanted to know if the participants of the open houses would affirm or reject the major themes that resulted from stakeholder interviews. The final purpose of the meetings was to inform community members of the planning process and encourage them to participate in the next stage of data collection — the online survey.

Because the open houses were another method of data collection and not purely communication to the community, the researchers used an open-house meeting style. Each meeting began with short introductions from the researchers and Forest Service staff before transitioning to self-guided activities for participants. Figure D1 shows the ERD Recreation Planner and the WWU research team; Table D1 shows the agenda.



*Figure D1. Recreation planner Jon Meier, researchers Dr. Tammi Laninga, Riley Hine, Kate Galambos and Erin Gregory at first open house in Entiat on Saturday, October 5, 2019.*



Table D1. Open House Agenda

CONTENT	PROCESS	TIME	OUTPUT
<b>1. Greeting &amp; Check-in</b>	FS and WWU Staff	<b>15 Minutes (prior to start time)</b>	Attendees understand the consent process
<b>2 . Welcome &amp; Purpose</b> [large group]	FS and WWU staff Meeting Overview	<b>10 Minutes</b>	Attendees understand roles, meeting purpose and project purpose.
<b>3. Facilitator Introductions</b> [large group]	FS and WWU staff	<b>5 Minutes</b>	Session Objectives
<b>4. Station Descriptions</b>	<b>Participants visit stations</b>		<b>Provide input at each station</b>
<b>Station 1: Current Recreation Locations &amp; Activities</b>	Mark on the map locations where you recreate and the types of activities you do there.	<b>40 Minutes</b>	Understanding of where people recreate in the ERD.
<b>Station 2: Future Recreation Opportunities</b>	Mark on map new recreation opportunities you would like to see in the future, and areas you would like to see restored.		Input on new recreation opportunities
<b>Station 3: Major Recreation Values Posters</b>	Dot Activity - Show which statements you agree (green) and disagree (red) with. What's missing?		Agreement/ disagreement on major themes related to recreation values.
<b>Station 4: Opportunities for Collaboration</b>	What does the community need from the FS/what does the FS need from the community?		Understanding of how community views the FS and its role
<b>5. Closure and Staying Involved</b>	WWU and FS staff Final wrap-up & Next Steps	<b>10 Minutes</b>	Participants know how to stay involved

There were four stations around the room that participants were encouraged to visit. Researchers guided participants through the activities and answered questions at each station.

The activities were as follows:

1. **Current Recreation Locations and Activities:** Two large, printed maps with trails and campgrounds were displayed. Participants were asked to do the following:

- Fill out a notecard with one location where you recreate. Indicate what activities you do there and give any additional comments or information. Be sure to write the location name in both blanks labeled “name.”
- Hand the notecard to the researcher for cutting.
- Using a push-pin, place the tag with the location name on either map in the approximate location.
- Reflect on the places your fellow community members recreate.
- Repeat for as many places as you want.

2. **Future Recreation Opportunities:** One reference map with trails and campgrounds was provided for participants to draw directly on given the following instructions:

- Consider areas that you would like better access to, would like to see turned into loop trails, or would like to see returned to previous accessibility. Reference the recreation site map.
- Using one of the provided markers, draw on the recreation site map to indicate places you would like to recreate in the future.

3. **Evaluating Major Themes:** Themes identified from the interviews — especially those that had multiple opposing themes — were written on large paper for participants to read.

Participants were then asked to do the following:

- Consider the themes on the flip charts.
- For the themes you agree with, place one green dot in a line next to the statement.
- For the themes you disagree with, place one red dot in a line next to the statement.
- If there are themes you think are relevant to this project but not present, write a new statement on the flip chart for your fellow community members to evaluate.

4. **Linking Community with Forest Service:** For this activity participants were asked to write on the white board to answer the following questions:

- What does the community need from the Forest Service?
- What does the Forest Service need from the community?

After about 40 minutes, the meetings reconvened as a large group to answer any final questions about the planning process. Participants were again encouraged to visit the online story map and sign-up to receive the online survey invitation.

### **Themes From Interviews Used at Open House (Station 3)**

1. All current trails should be open and maintained
2. Some trails should be closed for the purpose of environmental/ecological protection/restoration
3. Accessibility to recreation in the district should be determined based on user needs and desires

4. Accessibility to recreation in the district should be determined by the degree of environmental impact and ecological sustainability/longevity
5. Recreationists are better served by a district full of multiple use areas
6. Recreationists are better served by a district with some areas designated based on activity (ex. Designated non-motorized trails)
7. Recreation opportunities in the ERD should be more widely advertised to bring more people and tourism dollars to the community
8. Part of the value of the ERD is the lack of crowds and seclusion

### **Pybus Market**

Among other online methods, we advertised the upcoming open house meeting at Pybus Market<sup>19</sup> in Wenatchee on Sunday, October 6 from 9 am to 1 pm. While the primary purpose of tabling was to develop an interest in the open house meeting on the following Monday, the researchers also collected contact information and identified recreation areas of interest. The researchers requested interested people leave their contact information on a sign-up sheet. These emails and addresses were later added to the survey distribution list. The final goal of the Pybus Market tabling was to collect data regarding specific recreation locations. To collect this data, the researchers used the same process from activity 1 from the first open house, which asked for participants to indicate on a map where they recreate and what they do. This question was also included on the story map and online survey. By asking the same question across four data collection methods — open houses, storymap, survey, Pybus Market— the researchers aimed to get a broad range of participant responses.

### **Online Public Meeting: Spring 2020**

May 12, 6-7:30 PM, AdobeConnect

The goal of the spring public meeting was to communicate the initial results of the interviews, survey, and open houses. Unlike the fall open house meetings, the May meeting was not used as a formal data collection method. Instead, the meeting provided an opportunity for informal dialog with the public, to report initial findings, and give a project update. As a result, this meeting was structured with a presentation, followed by an opportunity for questions and answers. Researchers presented the most mentioned sites, trails, and recreation activities among the various data sources. Additionally, they shared demographic information of survey respondents and recreationists in the district. Attendees were asked if these results reflected their own preferences and needs. This informal process provided support for the strategy format and initial recommendations.

Additionally, attendees were polled on several questions regarding their recreation preferences and previous involvement in the strategy development. According to one poll, 44% of attendees had not previously participated in the public engagement opportunities for the strategy. Figure

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<sup>19</sup> Pybus Market is an indoor market located in downtown Wenatchee. On the weekends, vendors can pay \$10 to have a table in the middle of the market. The researchers set up a table to present information to people as they walked through the market regarding the open house meetings.

D2 shows the results of attendee’s favorite recreation activity in the ERD. Again, these attendees, while not formal research participants, increased the number of voices incorporated in the strategy development.

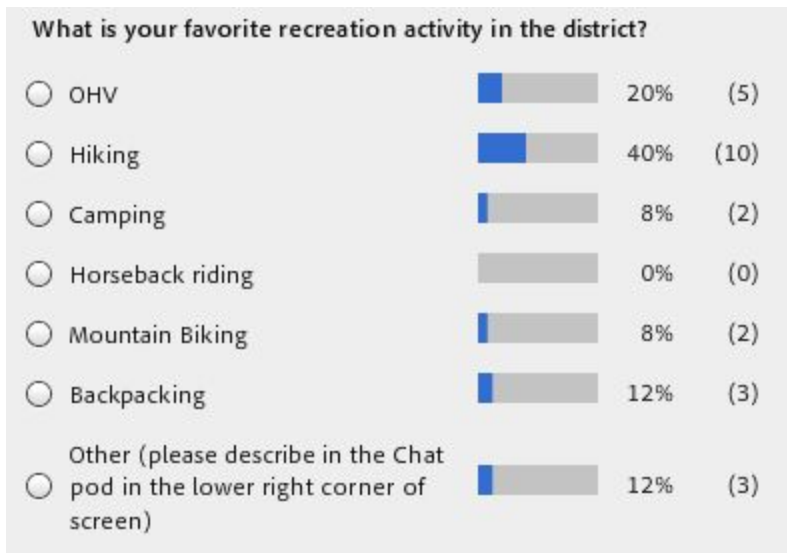


Figure D2. A poll during the AdobeConnect webinar asked attendees to share their favorite recreation activity in the district. While OHV was the most popular among all other social data sources, hiking was the most popular among the online meeting attendees. These results illustrate that attendees likely made up a different population than those from previous sources.

## Appendix E: Online Survey Methods

### Survey Instrument

The final method to collect input from current and potential future users of the Entiat Ranger District was to distribute an online survey. Recreation use on the Entiat Ranger District is light and more dispersed relative to neighboring Forest Service Districts. Traditional in-person visitor intercept approaches were unlikely to generate a reasonable number of survey respondents for the purposes of this study. An online survey therefore was a more appropriate tool for reaching a broader population.

The 21-question survey covered topics regarding current recreation preferences (activities and location of interest), barriers to recreation, attitudes regarding the purpose or desired outcomes of recreation, and demographics. The survey was available online in English and Spanish. The questions came from the Forest Service Interagency Generic Clearance for Federal Land Management Agencies Collaborative Visitor Feedback Surveys on Recreation and Transportation Related Programs and Systems with some minor edits to fit the context of this research. The compendium was developed as a tool for federal land agencies to guide collection of information from the public. With six key topic areas, each with sub-topics, the compendium lists hundreds of potential survey questions. To narrow questions, researchers used institutional input from district recreation planner, Jon Meier and Dr. Eric White, Research Social Scientist from the Forest Service Pacific Northwest Research Station.

### Survey Sampling

To generate a reasonable sample, potential survey respondents came from three sources: stakeholders, in person contacts, and the USFS interested persons list.

The first source included the list of stakeholders used for the initial interviews and any additional contacts recommended by stakeholders. The stakeholder list resulted in 53 contacts.

The second source consisted of visitors on the ERD during summer 2019 whose contact information was collected by researchers during field evaluations through in-person intercepts. While on trails, researchers spoke to nearly every adult they encountered. The researchers used paper contact cards with information about the strategy and space for an email address and/or physical address. For individuals who did not want to give their contact information at that juncture, the researchers distributed alternative cards with project information and an online link where they could give contact information. The researchers collected 47 completed contact cards over the summer. An additional 64 individuals gave their contact information through the online link.

The final source was the email addresses of interested persons maintained by the Okanogan-Wenatchee National Forest. The Okanogan-Wenatchee National Forest's list of

interested persons amounted to 338 contacts. These were persons who had previously indicated an interest in events and updates in Chelan County, where the ERD is located.

### **Survey Distribution**

The online survey was distributed in two pools: by the researchers to their contact lists collected from interviews and intercepts, and by Dr. Eric White to the FS interested persons list. In order to keep each contact list confidential, each had to be sent by the collecting agency. Both distribution sections followed the general methods outlined by Dillman et. al (2014), which included one initial invite, two follow-up emails, and one final non-response invitation. The four correspondences were sent one week apart. The survey was available online for five weeks and sent to 502 individuals. The survey concluded with 161 completed responses, for a response rate of 32%. The response rate was lower than predicted, however, the online survey represents just one data source among many. Therefore the results are best utilized in addition to interview, open house, and story map data sources. An additional non-response survey was sent to people who had not completed the survey after the invite and two follow-up emails. Fifteen people took the nonresponse survey.

### **Survey Invitation Email Text**

SUBJECT LINE: Sustainable Recreation Strategy Survey for Entiat Ranger District

Greetings,

We are inviting you to complete a short survey about your recreation experiences and preferences for management on the Entiat Ranger District in the Okanogan-Wenatchee National Forest. The Forest Service is seeking your input to inform the development of a new recreation strategy for the District. We are contacting you because of your prior interest in Forest Service recreation and management on the Entiat Ranger District.

To complete the online survey from Western Washington University please visit here: [URL].

Your participation in this survey is voluntary. There are no penalties for not answering some or all of the questions, but since each person will represent many others who will not be surveyed, your cooperation is extremely helpful. The answers you provide are confidential. Our results will be summarized so that the answers you provide cannot be associated with you.

Results from this survey will be included in a Sustainable Recreation Strategy being developed for the Entiat Ranger District, by Western Washington University. The results of this survey will help inform the future goals and priorities for recreation activities on the Entiat Ranger District. For additional information about this project, please visit



<https://usfs.maps.arcgis.com/apps/MapJournal/index.html?appid=52ea9fdc18e54606b63fef431476bd4f>

Thank you in advance for your consideration. Your insights and opinions are truly valuable to this research. We apologize should you receive this invitation twice. In order to protect your privacy, Western Washington University and the Okanogan-Wenatchee National Forest sent correspondence separately.

To be removed from further correspondence for this study, please reply to [galambk@wwu.edu](mailto:galambk@wwu.edu) . If you have any questions, please email [tammi.laninga@wwu.edu](mailto:tammi.laninga@wwu.edu) .

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### **Survey Follow-Up Email 1 & 2**

SUBJECT LINE: Recreation Strategy Survey—We want to include your viewpoints

Greetings,

We recently sent you an invitation to complete a short survey about the recreation resources on the Entiat Ranger District. We have not yet heard from you.

To complete the online survey from Western Washington University please visit here: [URL].

We are interested in knowing about your recreation experiences on the Entiat Ranger District and preferences for future management. We are contacting you because of your prior interest in Forest Service recreation and management on the Entiat Ranger District.

Results from this survey will be included in a Sustainable Recreation Strategy being developed for the Entiat Ranger District, by Western Washington University. The results of this survey will help inform the future goals and priorities for recreation activities on the Entiat Ranger District. For additional information about this project, please visit:

<https://usfs.maps.arcgis.com/apps/MapJournal/index.html?appid=52ea9fdc18e54606b63fef431476bd4f>

Your participation in this survey is voluntary. There are no penalties for not answering some or all of the questions, but since each person will represent many others who will not be surveyed, your cooperation is extremely helpful. The answers you provide are confidential. Our results will be summarized so that the answers you provide cannot be associated with you.

Thank you in advance for your consideration. Your insights and opinions are truly valuable to this research. We apologize should you receive this invitation twice. In order to protect your privacy, Western Washington University and the Okanogan-Wenatchee National Forest sent correspondence separately.

Sincerely,

To be removed from further correspondence for this study, please reply to [galambk@wwu.edu](mailto:galambk@wwu.edu) .  
If you have any questions, please email [tammi.laninga@wwu.edu](mailto:tammi.laninga@wwu.edu) .

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### **Non-Response Survey Invitation**

SUBJECT LINE: Recreation Strategy Survey—We don't want to miss your viewpoint

Greetings,

We recently invited you to complete a short survey about recreation on the Entiat Ranger District of the Okanogan-Wenatchee National Forest. We did not hear from you.

We want to ensure we did not miss any important groups in our study. To help us with that, we are asking if you will answer **6 questions**: [URL]

Your participation in this survey is voluntary. There are no penalties for not answering some or all of the questions, but since each person will represent many others who will not be surveyed, your cooperation is extremely helpful. The answers you provide are confidential. Our results will be summarized so that the answers you provide cannot be associated with you.

This will be the last message you will receive for this study.

Thank you in advance for your consideration. Your insights and opinions are truly valuable to this research.

---

### **Survey Contact Cards**



The Entiat Ranger District, in the Okanogan-Wenatchee National Forest, has partnered with Western Washington University and seeks public input to determine recreation user preferences for future decision-making. In a time of limited resources and ecological change, the Forest Service looks to the public to better understand the recreation needs and opportunities from people who love this place.

To offer your essential input and to stay updated on the project, please provide contact information.

Your email address: \_\_\_\_\_

Or provide a name and address: \_\_\_\_\_

\_\_\_\_\_



El Guardaparques Entiat se ha unido La Universidad de Western Washington y están buscando opiniones públicas de lo que prefieren los usuarios de las áreas recreativas para facilitar las futuras decisiones. En una época de recursos limitados y del cambio ecológico, el Servicio Forestal se vuelve hacia el público para entender mejor las necesidades y oportunidades deseadas la gente que ama a este lugar.

Para ofrecer su opinión y mantenerse informado, por favor provee información del contacto.

Su correo electrónico: \_\_\_\_\_

O su nombre y dirección de casa: \_\_\_\_\_

\_\_\_\_\_



*Sorry we missed you!*

The Entiat Ranger District, in the Okanogan-Wenatchee National Forest, has partnered with Western Washington University and seeks public input to determine recreation user preferences for future decision-making. In a time of limited resources and ecological change, the Forest Service looks to the public to better understand the recreation needs and opportunities from people who love this place.

To offer your essential input, please provide your contact info by scanning the code below with your smart phone:



Or type this link into your browser: [tinyurl.com/y28ok2e3](https://tinyurl.com/y28ok2e3)

To stay updated on the project, please visit our website:  
[www.fs.usda.gov/detail/okawen/news-events/?cid=FSEPRD637031](https://www.fs.usda.gov/detail/okawen/news-events/?cid=FSEPRD637031)



*¡Lamentamos que no nos haya encontrado!*

El Guardaparques Entiat se ha unido La Universidad de Western Washington y están buscando opiniones públicas de lo que prefieren los usuarios de las áreas recreativas para facilitar las futuras decisiones. En una época de recursos limitados y del cambio ecológico, el Servicio Forestal se vuelve hacia el público para entender mejor las necesidades y oportunidades deseadas la gente que ama a este lugar.

Para participar en nuestra encuesta, escanee el siguiente código para proporcionar su información de contacto:



O visita este sitio web: [tinyurl.com/y28ok2e3](https://tinyurl.com/y28ok2e3)

Para mantenerse informado, visita nuestro sitio web en:  
[www.fs.usda.gov/detail/okawen/news-events/?cid=FSEPRD637031](https://www.fs.usda.gov/detail/okawen/news-events/?cid=FSEPRD637031)

## Appendix F: Qualtrics Survey Instrument

### Entiat Sustainable Recreation Strategy Survey

Please complete the survey in one session. The survey will not save your progress if you leave the window and return.

Consent: Your participation in this survey is voluntary. There are no penalties for not answering some or all of the questions, but since each person will represent many others who will not be surveyed, your cooperation is extremely helpful. The answers you provide are confidential. Our results will be summarized so that the answers you provide cannot be associated with you. You must be 18 years of age or older to participate. Thank you for your time and input.

Based on the information above, do you consent to participate in this survey?

- ☐ Yes, I am 18 years old or older and consent (1)
- ☐ No, I do not consent (2)

*Skip To: End of Survey If Based on the information above, do you consent to participate in this survey? = No, I do not consent*

### General Use/Attitudes/Preferences

These first few questions ask for general information and how often you visit the Entiat Ranger District and your view of recreation conditions.

#### Visit

Q1 How long have you been visiting the Entiat Ranger District?

- ☐ I have never visited the Entiat Ranger District (1)
- ☐ Less than 1 year (2)
- ☐ 1 to 5 years (3)
- ☐ 6 to 10 years (4)
- ☐ 11 to 19 years (5)
- ☐ More than 20 years (6)

*Skip To: Q5 If How long have you been visiting the Entiat Ranger District? = I have never visited the Entiat Ranger District*



Q2 How would you describe the frequency of your visits to the Entiat Ranger District?

- ☐ Infrequent visitor (once every five to ten years) (1)
- ☐ Occasional visitor (once every one to four years) (2)
- ☐ Regular visitor (1-3 times per year) (3)
- ☐ Frequent visitor (4 or more times per year) (4)

Q3 Where do you go to recreate most often in the Entiat Ranger District? Please use the reference map below to find location names.

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Q4 To what extent do you feel that the following issues are currently a problem influencing recreation in the Entiat Ranger District?

	Not a problem (1)	Small problem (2)	Moderate problem (3)	Big problem (4)	Not applicable (5)
Condition of roads (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too many people (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of parking (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site closures due to hazardous conditions (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site closures due to environmental restoration projects (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Change in scenery after wildfires (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of accessibility within the ranger district in general (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of information about the ranger district in general (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of adequate trail markers (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of restrooms (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Please specify) (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Activities

Q5 Please select all the activities you already do in the Entiat Ranger District or indicate if you have never been to the Entiat Ranger District.

- ☐ I haven't visited before (1)
- ☐ Mountain biking (2)
- ☐ Backcountry camping (3)
- ☐ Campsite/Cabin camping (4)
- ☐ Hiking (5)
- ☐ Fishing (all types) (6)
- ☐ Hunting (all types) (7)

- ☐ Horse riding OR stock use (8)
- ☐ Nature viewing (9)
- ☐ OHV (off-highway vehicle) trail riding (10)
- ☐ Picnicking (11)
- ☐ Cross-country skiing (12)
- ☐ Snowmobiling (13)
- ☐ Snowshoeing (14)
- ☐ Nonmotorized water activities (15)
- ☐ Trail running (16)
- ☐ Climbing (17)
- ☐ Outdoor education (18)
- ☐ Scenic driving (19)
- ☐ Gathering (mushrooms, firewood, berries, etc.) (20)
- ☐ Other (21) \_\_\_\_\_

Q6 Please select all the activities you have not done, but would like to in the future in the Entiat Ranger District.

- ☐ There are no additional activities I'd like to do (1)
- ☐ Mountain biking (2)
- ☐ Backcountry camping (3)
- ☐ Campsite/Cabin camping (4)
- ☐ Hiking (5)
- ☐ Fishing (all types) (6)
- ☐ Hunting (all types) (7)
- ☐ Horse riding OR stock use (8)
- ☐ Nature viewing (9)

- ☐ OHV (off-highway vehicle) trail riding (10)
- ☐ Picnicking (11)
- ☐ Cross-country skiing (12)
- ☐ Snowmobiling (13)
- ☐ Snowshoeing (14)
- ☐ Nonmotorized water activities (15)
- ☐ Trail running (16)
- ☐ Climbing (17)
- ☐ Outdoor education (18)
- ☐ Scenic driving (19)
- ☐ Gathering (mushrooms, firewood, berries, etc.) (20)
- ☐ Other (21) \_\_\_\_\_

Issues

Q7 Thinking about your potential future visits to the Entiat Ranger District, how desirable or undesirable are each of the following characteristics or resources to you?

	Very undesirable (1)	Undesirable (2)	Neither (3)	Desirable (4)	Very desirable (5)
A few trees blown down across the trail (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bridges across creeks (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Directional signs (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Pit toilets at backcountry campsites (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food boxes at campsites (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prohibiting campfires in the backcountry (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visible burn areas (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having designated campsites in the backcountry (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multiple-Use Trails (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Single-Use Trails (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rangers on patrol (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Preferences

Q8 How important do you believe each of the following is as a purpose of the Entiat Ranger District?

	Not at all important (1)	Slightly important (2)	Moderately important (3)	Very important (4)
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A place for recreation (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place to spend time with family (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place for exercise (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place for wildlife protection (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place of high economic value for tourism and guiding (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place for wilderness preservation (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place to learn about history and cultural heritage (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place for adventure (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place for remoteness and isolation (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place for quiet and natural sounds (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A place to escape daily stress (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place to understand the effects of climate change (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place that protects water and air quality (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A place absent of human impacts (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 In the future, fees may be considered for recreation access to the undeveloped areas of the Entiat Ranger District. Most collected funds would be used for recreation improvements on the District. Would you be willing to pay a fee to access recreation in the undeveloped areas of the Entiat Ranger District?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not sure (3)

The survey is nearly complete. These last sections are dependent on if you have visited the Entiat Ranger District in the past.

- ☐ Click here if you have visited the Entiat Ranger District in the past to continue to the next section (1)
- ☐ Click here if you have not visited the Entiat Ranger District to continue to the final section (2)

## Demographics

These final questions tell us a little bit about you.

Q21 What is your age?

- ☐ 18 - 24 (1)
- ☐ 25 - 34 (2)
- ☐ 35 - 44 (3)
- ☐ 45 - 54 (4)
- ☐ 55 - 64 (5)
- ☐ 65+ (6)

Q 22 Which categories describe you? (Select all that apply)

- ☐ White (1)
- ☐ Black or African American (2)
- ☐ American Indian or Alaska Native (3)
- ☐ Asian (4)
- ☐ Native Hawaiian or Pacific Islander (5)
- ☐ Hispanic, Latino, or Spanish origin (6)
- ☐ Middle Eastern or North African (7)
- ☐ Other (8) \_\_\_\_\_

Q 23 What is the ZIP code of your primary residence?

\_\_\_\_\_

Q24 Do you own a second home in Chelan County, Washington?

- ☐ Yes (1)
- ☐ No (2)

Q25 Which languages do you use to communicate? (Select all that apply)

- ☐ English (1)
- ☐ Spanish (2)
- ☐ Russian (3)
- ☐ Other (4) \_\_\_\_\_

Q26 What is your gender?

- ☐ Male (1)
- ☐ Female (2)
- ☐ Other (3)

Q27 If you are interested in receiving a one-time email about the results of this survey, please provide your email below.

Most Recent Visit

The next set of questions ask you about your experiences specifically during your most recent visit to the Entiat Ranger District.

Q10 Where did you go on your most recent visit to the Entiat Ranger District? (Please see reference map below for location names)

Q11 How long did you spend in the Entiat Ranger District on your most recent visit?

- ☐ A few hours or less (1)
- ☐ Half day (2)
- ☐ Full day (3)
- ☐ Two days (4)
- ☐ 3-6 days (5)
- ☐ Other (6)\_\_\_\_\_

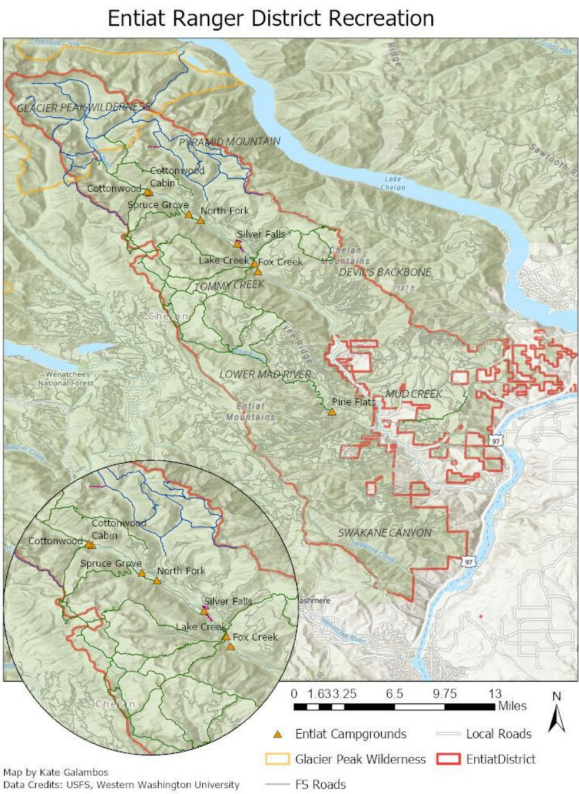


Figure F1. Online Survey Reference Map for the ERD

Q12 To what extent did the following factors influence your most recent visit to the Entiat Ranger District?

	Not at all (1)	Very little (2)	Somewhat (3)	To a great extent (4)	Not applicable (5)
Traffic congestion on roads (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parking congestion/shortages (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weather (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfires (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Site closures (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of accessibility for people with disabilities (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Road conditions or closures (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13 Please rate the recreation services and quality of the recreation facilities in the Entiat Ranger District on your most recent visit. First, rate your satisfaction or dissatisfaction with the item (indicate not applicable if you had no experience with the service or facility on your last visit).

Next, rate the importance of this item to the overall quality of recreation experience in general. To rate importance, use a scale from 1 to 5 where 1 means "not at all important," and 5 means "extremely important."

	Level of Satisfaction						Degree of Importance				
	Very dissatisfied (1)	Somewhat dissatisfied (2)	Neutral (3)	Somewhat satisfied (4)	Very satisfied (5)	Not applicable (6)	1	2	3	4	5
Scenery at the site/area (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Condition of the natural environment (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Available parking (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Cleanliness of restrooms (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Conditions of developed recreation facilities (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Condition of roads (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Condition of trails (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Feeling of safety (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Helpfulness of employees (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
Availability of interpretive/e ducational displays, signs and exhibits (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		



Value for the fee paid (fee sites only) (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of information on recreation opportunities (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adequacy of signage to destination (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessibility for people with disabilities (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Specific Site Questions

These next questions relate to specific sites within the Entiat Ranger District.

Q14 We are interested in knowing if there are any specific places or sites you used to visit but no longer visit, or have changed the time when you visit, due to factors such as crowding, environmental damage, or change, etc. Write in the site and identify reasons for your visitation change.

You may identify up to four sites.

If you would like to identify fewer than four, simply leave the box blank and click the arrow to navigate to the next question.

Q14a Site 1

---

Display This Question:

If Site 1 Text Response Is Not Empty

14 b Please identify why you no longer visit the above site.

- ☐ Overcrowding (1)

- Closure (2)
- Inadequate site facilities (3)
- Poor site conditions (4)
- Weather (5)
- Wildfires (6)
- Poor road access (7)
- Inadequate parking (8)
- Other (9) \_\_\_\_\_

*Display This Question:*

*If Site 1 Text Response Is Not Empty*

14 c Site 2

---

*Display This Question:*

*If Site 2 Text Response Is Not Empty*

*Carry Forward All Choices - Displayed & Hidden from "Please identify why you no longer visit the above site. "*

14 d Please identify why you no longer visit the above site.

- Overcrowding (1)
- Closure (2)
- Inadequate site facilities (3)
- Poor site conditions (4)
- Weather (5)
- Wildfires (6)
- Poor road access (7)
- Inadequate parking (8)

- Other (9) \_\_\_\_\_

*Display This Question:*

*If Site 2 Text Response Is Not Empty*

14 e Site 3

---

*Display This Question:*

*If Site 3 Text Response Is Not Empty*

*Carry Forward All Choices - Displayed & Hidden from "Please identify why you no longer visit the above site. "*

14 f Please identify why you no longer visit the above site.

- Overcrowding (1)
- Closure (2)
- Inadequate site facilities (3)
- Poor site conditions (4)
- Weather (5)
- Wildfires (6)
- Poor road access (7)
- Inadequate parking (8)
- Other (9) \_\_\_\_\_

*Display This Question:*

*If Site 3 Text Response Is Not Empty*

14 g Site 4

---

*Display This Question:*

*If Site 4 Text Response Is Not Empty*

*Carry Forward All Choices - Displayed & Hidden from "Please identify why you no longer visit the above site. "*

14 h Please identify why you no longer visit the above site.

- ☐ Overcrowding (1)
- ☐ Closure (2)
- ☐ Inadequate site facilities (3)
- ☐ Poor site conditions (4)
- ☐ Weather (5)
- ☐ Wildfires (6)
- ☐ Poor road access (7)
- ☐ Inadequate parking (8)
- ☐ Other (9) \_\_\_\_\_

Q 15 Please tell us how many times you have visited the following places in the Entiat Ranger District in the past 12 months.

Q16 Myrtle Lake

- ☐ None (1)
- ☐ 1-3 times (2)
- ☐ 4-6 times (3)
- ☐ 7-9 times (4)
- ☐ Other (5) \_\_\_\_\_

Q17 Mad Lake

- ☐ None (1)
- ☐ 1-3 times (2)
- ☐ 4-6 times (3)
- ☐ 7-9 times (4)
- ☐ Other (5) \_\_\_\_\_

Q18 Silver Falls Trail

- ☐ None (1)
- ☐ 1-3 times (2)
- ☐ 4-6 times (3)
- ☐ 7-9 times (4)
- ☐ Other (5) \_\_\_\_\_

Q 19 North Fork Trail

- ☐ None (1)
- ☐ 1-3 times (2)
- ☐ 4-6 times (3)
- ☐ 7-9 times (4)
- ☐ Other (5) \_\_\_\_\_

Q20 Ice Lakes

- ☐ None (1)
- ☐ 1-3 times (2)
- ☐ 4-6 times (3)
- ☐ 7-9 times (4)
- ☐ Other (5) \_\_\_\_\_

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## Non-Response Survey

### Entiat Sustainable Recreation Strategy Non-Response Survey

## General Use/Attitudes/Preferences

These first few questions ask for general information and how often you visit the Entiat Ranger District and your view of recreation conditions.

## Visit

Q1 How long have you been visiting the Entiat Ranger District?

- ☐ I have never visited the Entiat Ranger District (1)
- ☐ Less than 1 year (2)
- ☐ 1 to 5 years (3)
- ☐ 6 to 10 years (4)
- ☐ 11 to 19 years (5)
- ☐ More than 20 years (6)

*Skip To: Q73 If How long have you been visiting the Entiat Ranger District? = I have never visited the Entiat Ranger District*

Q2 How would you describe the frequency of your visits to the Entiat Ranger District?

- ☐ Infrequent visitor (once every five to ten years) (1)
- ☐ Occasional visitor (once every one to four years) (2)
- ☐ Regular visitor (1-3 times per year) (3)
- ☐ Frequent visitor (4 or more times per year) (4)

Q3 Where do you do to recreate most often in the Entiat Ranger District? Please use the reference map below to find location names.

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Q4 Please select all the activities you already do in the Entiat Ranger District or indicate if you have never been to the Entiat Ranger District.

- ☐ I haven't visited before (1)
- ☐ Mountain biking (2)
- ☐ Backcountry camping (3)
- ☐ Campsite/Cabin camping (4)
- ☐ Hiking (5)
- ☐ Fishing (all types) (6)
- ☐ Hunting (all types) (7)
- ☐ Horse riding OR stock use (10)
- ☐ Nature viewing (8)
- ☐ OHV (off-highway vehicle) trail riding (9)



- ☐ Picnicking (11)
- ☐ Cross-country skiing (12)
- ☐ Snowmobiling (13)
- ☐ Snowshoeing (14)
- ☐ Nonmotorized water activities (15)
- ☐ Trail running (16)
- ☐ Climbing (17)
- ☐ Outdoor education (18)
- ☐ Scenic driving (19)
- ☐ Gathering (mushrooms, firewood, berries, etc.) (20)
- ☐ Other (21) \_\_\_\_\_

Q5 Please select all the activities you have not done, but would like to in the future in the Entiat Ranger District.

- ☐ There are no additional activities I'd like to do (1)
- ☐ Mountain biking (2)
- ☐ Backcountry camping (3)
- ☐ Campsite/Cabin camping (4)
- ☐ Hiking (5)
- ☐ Fishing (all types) (6)
- ☐ Hunting (all types) (7)
- ☐ Horse riding OR stock use (10)
- ☐ Nature viewing (8)
- ☐ OHV (off-highway vehicle) trail riding (9)
- ☐ Picnicking (11)
- ☐ Cross-country skiing (12)
- ☐ Snowmobiling (13)
- ☐ Snowshoeing (14)
- ☐ Nonmotorized water activities (15)
- ☐ Trail running (16)
- ☐ Climbing (17)
- ☐ Outdoor education (18)
- ☐ Scenic driving (19)

☐ Gathering (mushrooms, firewood, berries, etc.) (20)

☐ Other (21) \_\_\_\_\_

Q6 What is the ZIP code of your primary residence\_\_\_\_\_

## Appendix G: Trail Ranking Methods

To determine which trails should be prioritized as part of the final recommendation of this report, social, financial, and environmental factors were considered. All 24 of the trails evaluated based on physical, current conditions, were ranked based on field condition and popularity among users. Only trails that had both current conditions data and were mentioned among users were included in the body of this strategy. Sites that were mentioned among users, but lacked current conditions data are displayed in Appendix H. Sites with current conditions data alone were included as part of the supplemental Entiat Facilities Report document.

### Current Conditions Ranking

The results of the trail evaluations were used to determine the current conditions score assigned to each trail. As each trail had many points representing features of varying severity, the features were ranked based on institutional knowledge from Forest Service staff. To utilize knowledge from resource specialists to inform the rankings, staff were informally surveyed during a collaborative meeting in January, 2020. The activity was conducted with a variety of specialists at the District and Forest office including fire managers, biologists, botanists, and recreation management staff. These employees were asked to rank features based on the anticipated resources required to either maintain, restore, or fix the feature using the worksheet shown in Figure G1.

#### Ranking Exercise - Handout 1

In order to develop trail scores, we need your institutional knowledge to identify trail features that necessitate the most investment of time and resources to repair or maintain. These features were noted as part of the trail evaluations for the Entiat Sustainable Recreation Strategy. Each feature is paired with additional attributes such as length, size, and degree of severity (see Handout 2 for attributes). **For the purpose of this exercise, please rank each feature below, without these attributes in mind.**

If it helps, consider these features as if you are a manager prioritizing which trails receive maintenance or repairs based on the degree of investment required.

1. Rank each feature relative to all other features. In other words, rank each feature on a scale of 1-21, with the feature with a score of 1 requiring the least resources.

*Figure G1. An excerpt from the instructions for the feature ranking exercise that was distributed to resource specialists at a January 2020 meeting.*

For example, an “unimproved crossing” feature requires more investment of resources to repair and therefore has a higher ranked score than the “overgrown vegetation” feature, which could be considered a part of annual trail maintenance.

The results of the exercise were analyzed by researchers and the recreation program manager to synthesize the results into one ranking method. The results of the January meeting revealed that the best way to rank the features was in four groups rather than in order of 1-21. The features were grouped into these four categories:

1. Natural features — no maintenance
2. Existing maintenance — low maintenance
3. Impeding safety — additional maintenance
4. Trail redesign — high maintenance

Table G1 shows trail features ranked based on required resources to repair or maintain by Forest Service employees.

*Table G1. Trail Feature Ranking*

Feature	Rank
Fall Line Slope	1
Blackened Vegetation	1
Wet Area	1
Washboarding	1
Trail Braiding	1
Snag	1
Potential Hazard	1
Unimproved Crossing	2
Obstacle	2
Scenic Vista	2
Cut Switchback	2
Culvert	2
Improved Crossing	2
Improved Steps	2
Fall Line Slope	3
Insufficient Signage	3
Washout	3
Overgrown Veg	3
Trenching	3
Concrete Trellis	3
Erosion	4

Additionally, the field conditions survey noted additional attributes beyond just the presence of each feature. Since most features had attributes beyond just presence, the attributes were also ranked based on relative resources required to repair, or maintain. For example, a snag of “low severity,” that is a small or fairly stable snag, is less of a problem than a snag of “high severity,” that is a large tree that is positioned to fall directly on trail. Beyond severity, feature attributes included length, width, type, presence of environmental damage, and ability to safely avoid the feature. Each of these attributes were not applicable to all features, therefore, attributes were assigned to features individually. For example, the attribute of “length” is appropriate to note for the “unimproved crossing” feature, but inappropriate for the “insufficient signage” feature.

To develop a score for each trail, the formula in Figure G2 was used. The formula depicts a trail with just two features, each with only one individual attribute. The real calculations incorporated trails with dozens of points, each with more than one attribute.

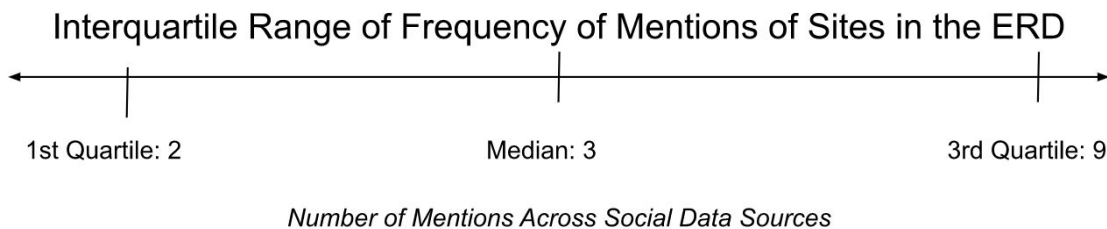
$$\text{Trail Score} = \frac{(\text{Feature Rank}(\text{Attribute1Rank} + \text{Attribute2Rank})) + (\text{Feature Rank}(\text{Attribute1Rank} + \text{Attribute2Rank}))}{\text{Number of Features}}$$

*Figure G2. Trail Score Formula*

Based on the trail score formula, trails with the highest trail score are those that require the most investment of resources and those with the lowest scores require the least. In addition to these calculations, specific trail features were noted based on frequency for each trail to give a broad analysis of the issues present on each of the 24 trails. These general assessments could be helpful for managers when determining the appropriate staff or volunteers to complete trail maintenance as some repairs require less expertise than others. These data are available to review on the “Trail Conditions & Fact Sheets” in the Entiat Facilities Report.

### Popularity Ranking

The social popularity, or general interest in a trail, was determined based on the frequency of mention in the online survey, story map, and open house activities (referred to as “social data sources”). Popularity was assigned using descriptive statistical methods to identify the interquartile range of the number of mentions per recreation site (Figure G3).



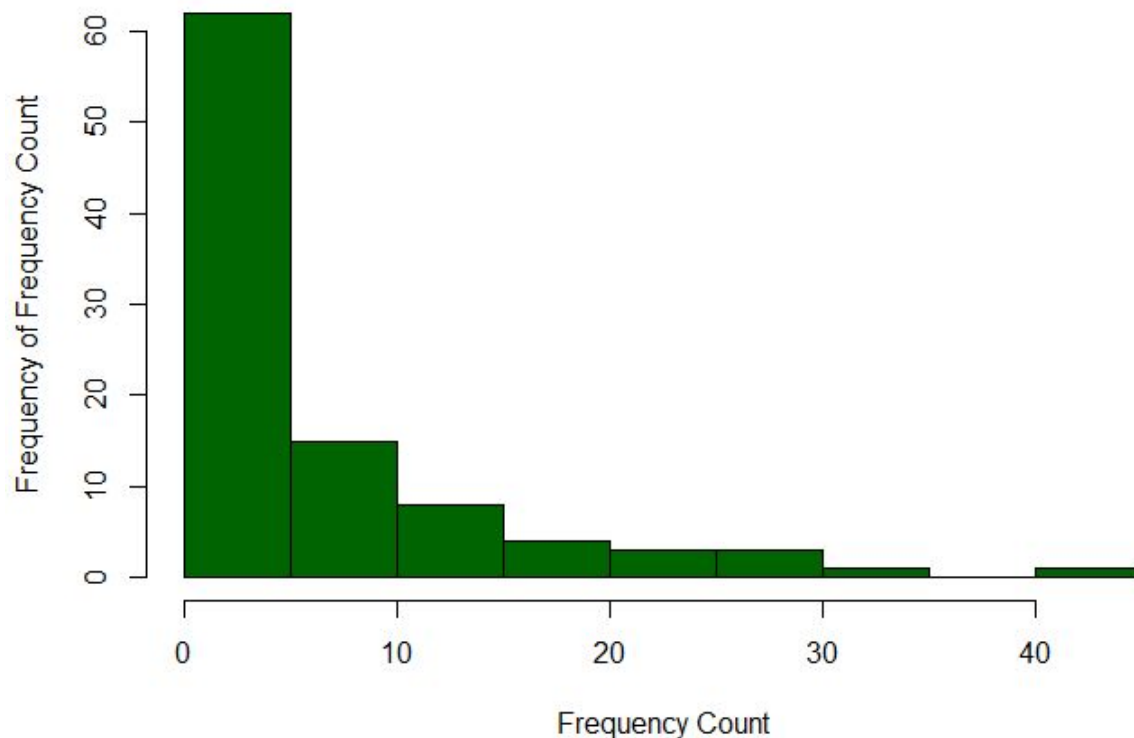
*Figure G3. The scale of popularity of a trail is determined based on the frequency of mention in the online survey, story map, and at open houses.*

Table G2 shows the classification of the interquartile range for the frequency of mentions per site. If a site was mentioned a total of 5 times throughout all social data sources, it would be considered “popular.” Figure G4 shows the distribution of frequency counts of mentions of sites in the ERD across all social data sources. The graph shows the frequency counts were positively-skewed to the right. Thus, most sites received mentions of between 0-10, as shown by the first two bars on the left. This distribution helped inform the classification of popularity values along with the interquartile range shown in Table G2.

*Table G2. The Classifications for Site Popularity*

Popularity Classification	Number of Mentions
Mentioned (1)	1-2
Somewhat popular (2)	3
Popular (3)	4-9
Most popular (4)	10 or more

**Distribution of Frequency Counts From ERD Social Data**



*Figure G4: The distribution of frequency counts of mentions of sites in the ERD across all social data sources.*



## Appendix H: All Sites Mentioned in Social Data

The following figures show all sites that were mentioned by respondents of the interviews, online survey, Story Map, and open house/public meetings. As mentioned previously, only sites that were evaluated as part of the field conditions reports are included in the strategy recommendations. The following data offers an overview of the complete data collected regarding where people recreate in the Entiat Ranger District.

Trails (Table H1), sites (Table H2), and roads (Table H3) are ranked by the number of mentions received via all social data sources as outlined in Appendix G. The higher the “Popularity Rank,” the more frequently the trail, site, or road was mentioned. Figure H1 is a map displaying the popularity rank for trails, sites and roads.

*Table H1. Popularity Rank for Trails in the ERD by Zone*

Trail Name	Geographic Zone	Popularity Rank (4 = most popular)
25 MILE DRIVE	1	3
ANGLE PEAK	2	1
ANTHEM CREEK	3	3
BILLY CREEK	2	2
BILLY RIDGE	2	1
BLUE CREEK	3	2
BUTTE CREEK	3	1
COOL CREEK	4	2
COUGAR RIDGE	2	1
COW CREEK MEADOWS	3	3
DEVIL'S BACKBONE	2	4
DUNCAN HILL	3	4
EMERALD PARK	4	3
ENTIAT RIVER TRAIL	4	4
FERN LAKE	3	4

FOUR MILE RIDGE	2	2
GARLAND PEAK	4	1
HI YU	2	1
HUNTERS	2	2
ICE CREEK	4	3
ICE LAKES	4	4
JIMMY CREEK	2	2
KLONE PEAK VIEW POINT	2	3
LAKE CREEK	2	4
LARCH LAKES	4	4
LOST LAKE	2	1
LOWER MAD RIVER	1	4
MAD LAKE	2	4
MAD RIVER (UPPER)	1	4
MIDDLE TOMMY	2	3
MYRTLE LAKE	3	4
NORTH FORK ENTIAT RIVER	3	4
NORTH TOMMY	2	2
POMAS CREEK	4	1
PYRAMID MOUNTAIN	4	4
SHETIPO	3	4
SILVER FALLS BARRIER-FREE	2	1
SILVER FALLS NAT'L RECREATION	2	4
SOUTH TOMMY	2	1
STELIKO RIDGE	1	3
THREE CREEKS	3	3

TYEE RIDGE	2	4
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Table H2. Popularity Rank for Sites in the ERD by Zone

Site Name	Geographic Zone	Popularity Rank (4 = most popular)
Big Hill	3	1
Bisping Canyon	1	1
Buck Ridge	4	3
Cardinal Peak	4	1
Cottonwood Campground - Entiat Ranger District	3	3
Crow Hill	3	1
Dick Mesa	1	1
Dinkelman Ridge	1	1
Entiat Falls Viewpoint	2	1
Entiat Glacier	4	1
Entiat Meadows	4	4
Fox Creek Campground	2	3
French Corral	1	1
Gopher Mountain	4	1
Grouse Pass	3	3
Hornet Ridge	2	2
Johnson Creek	1	2
Lake Creek Campground	2	2
Maverick Saddle	2	3
Mills Canyon	1	2
Minnow Ridge	2	1
Moe Ridge	1	1

North Fork Campground	3	2
Oklahoma Gulch	1	4
Pine Flats Campground	1	1
Pinnacle Mountain	4	1
Saska Pass	4	2
Shady Pass	3	3
Silver Falls Campground	2	1
Spruce Grove Campground	3	1
Stormy Mountain	2	2
Two Little Lakes	2	1
Tyee Lookout	2	2
Whistling Pig Trailhead	2	1

*Table H3. Popularity Rank for Roads in the ERD by Zone*

Road Name	Geographic Zone	Popularity Rank (4 = most popular)
BIG HILL ROAD	3	1
BILLY SPUR	2	4
CRUM	1	2
DINKELMAN RIDGE	1	1
MUD CREEK	1	4
POTATO CREEK	1	3
SWAKANE	1	4
TYEE RIDGE ROAD	2	3

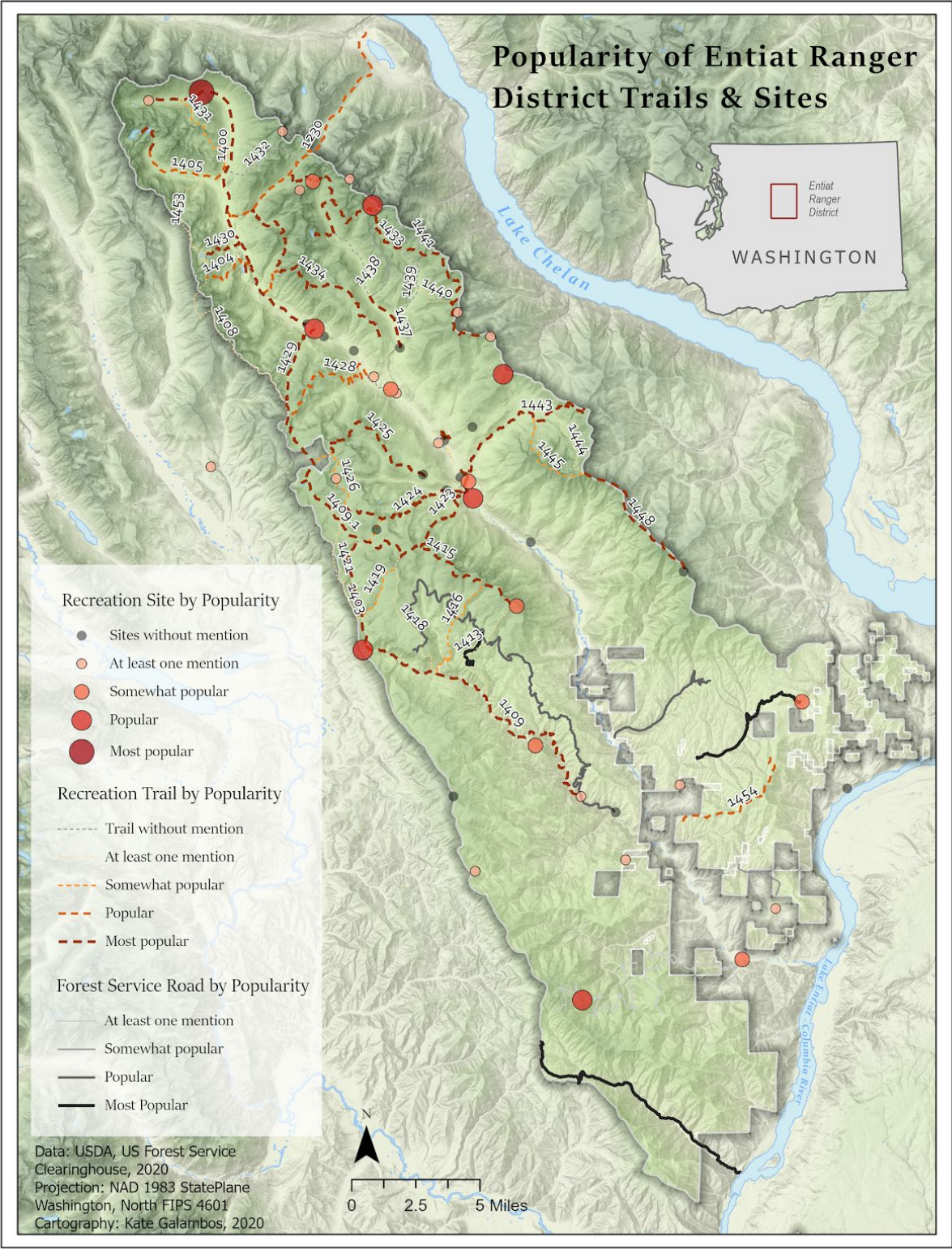


Figure H1. Site, Trail and Road Popularity based on Frequency of Mention (popularity).